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M Y S O R E

AND

COORG.

A Gazetteer compiled for the Government of India.

BY

LEWIS RICE,

Director of Public Instruction Mysore and Coorg.

VOL. I.

MYSORE, IN GENERAL.

BANGALORE:

MYSORE GOVERNMENT PRESS,

1877.

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v. 1

Preface.

On the termination, in May 1799, of the last English war with Mysore, and the restoration of the Hindu Rāj, which followed, it was resolved by the East India Company to obtain a topographical survey and general statistical account of the Territories that, for many years preceding, had been the scene of political events which attracted a large measure of attention not only in India and the East but also in England, France and other European countries.

Dr. Francis Buchanan (who subsequently assumed the name of Hamilton) was accordingly deputed, in February 1800,* by the Governor General, the Earl of Mornington, afterwards Marquis Wellesley, to travel through and report upon "the Dominions of the Raja of Mysore, and the country acquired by the Company in the late war from the Sultan, as well as that part of Malabar which the Company annexed to their own Territories in the former war under Marquis Cornwallis." He set out on this journey from Madras on the 23rd April 1800, and completed it on the 6th July 1801. His report was written from day to day, while travelling, in the form of a Journal, which on completion was transmitted to England and placed in the library of the East India House. On the recommendation of the learned Dr. (afterwards Sir Charles) Wilkins, the Librarian, its publication was sanctioned at the end of 1805, but the manuscript went to press apparently without the knowledge of its author. "Soon afterwards," says Dr. Buchanan in his introduction, "my duty having unexpectedly brought me to England, I was agreeably surprised to find that my Journal had obtained a reception so favourable. It is true I wished to have abridged the work before publication, and altered its arrangement; but as the printing had commenced before my arrival, and as my stay in England was likely to be very short, I could not undertake such alterations. I have therefore contented myself with revising the manuscript, and the superintendency of the press has been entrusted to Mr. Stephen Jones."

The work appeared in 1807, in 3 quarto volumes, under the title of *A Journey from Madras through the countries of Mysore, Canara and Malabar*. Every page teems with valuable information, but the disjointed style inseparable from the nature of a daily journal makes it difficult to consult, and it is much to be regretted that the accomplished author had not the opportunity of throwing the work into a more suitable form for publication. It was reprinted, in 2 volumes octavo, at Madras in 1870.

* Then already well known for his valuable botanical researches in Burma and Chittagong.

While Dr. Buchanan was engaged in these travels, Colonel Colin Mackenzie—eventually Surveyor General of India, and well known to Orientalists for his antiquarian collections in Southern India*—was commissioned by the Governor General to make a Survey of Mysore. He was allowed only three assistants, with a medical officer as surgeon and naturalist. In spite of many obstacles, however, the survey was continued till 1807. The result was not alone a valuable contribution to geographical knowledge, but considerable materials were acquired of the statistics and history of the country. These were recorded in folio volumes transmitted to the East India Company. Copies of 8 volumes, attested by Colonel Mackenzie's signature, are deposited among the records of the Mysore Residency. The most novel and important of the discoveries made by him was that of the existence of the sect of Jains in India, which he was the first to bring to notice.

The first surgeon and naturalist attached to the Mysore Survey was Dr. Benjamin Heyne, whose papers on a variety of subjects relating to this and the neighbouring countries were published in London in 1814 (also by the recommendation of Dr. Wilkins, Librarian at the East India House) under the title of *Tracts, Historical and Statistical, on India*. Subsequently, the gifted Dr. John Leyden† was attached to the Survey in the same capacity, but beyond a few anecdotes and verses in his *Poetical Remains*, published in London in 1819, I have failed to meet with anything of his specially about this Province, though it is stated that "he drew up some useful papers, which he communicated to the Government, relative to the mountainous strata and their mineral indications; as to the diseases, medicines and remedies of the natives of My-

* Including, according to the catalogue by Prof. H. H. Wilson, 1,563 manuscripts of literary works, 2,070 local tracts, 8,976 copies of inscriptions, 2,150 translations, 2,709 plans and drawings, 6,218 coins, and 145 images and antiquities.

† "He rose," as Sir John Malcolm, Resident of Mysore, describes, "by the power of native genius, from the humblest origin to a very distinguished rank in the literary world. His studies included almost every branch of human science, and he was alike ardent in the pursuit of all. The greatest power of his mind was perhaps shewn in his acquisition of modern and ancient languages."

His end was most sad. On the conquest of Java in 1811, he accompanied the Governor General, Lord Minto, to that island, and hearing at Batavia of a library containing a valuable collection of oriental manuscripts, hastened to explore it. The long low room, an old depository of effects belonging to the Dutch Government, had been shut up for some time, and the confined air was strongly impregnated with the poisonous quality which has made Batavia the grave of so many Europeans. Without the precaution of having it aired, he rushed eagerly in to examine its treasures, was seized in consequence with a mortal fever, and died on the 28th August, after three days illness, in the 36th year of his age.

Southey wished "that Java had remained in the hands of the enemy, so Leyden were alive;" while Sir Walter Scott paid the following tribute to his memory in the *Lord of the Isles*:—

His bright and brief career is o'er,
And mute his tuneful strains;
Quenched is his lamp of varied lore,
That loved the light of song to pour;
A distant and a deadly shore
His Leyden's cold remains.

The centenary of Leyden's birth was celebrated with public rejoicings in 1875 at his native village of Denholm, on the banks of the Teviot, in Scotland.

sore, and the peculiarities of their habits and constitution by which they might be exposed to disease; as to the different crops cultivated in Mysore and their rotation; and to the languages of Mysore, and their respective relations." Heyne's observations were confined to the north and east; Leyden's papers, if traced, would give us information regarding the south and west.

Colonel Mark Wilks, distinguished as the historian of Mysore, at which Court he was for a time Resident, published his well known work under the title of *Historical Sketches of the South of India*, in 3 volumes quarto; the first of which appeared in London in 1810, and the two last not till 1817, owing to his appointment during the interval as Governor of St. Helena, which office he held until the imprisonment on that island of the emperor Napoleon Buonaparte. "It displays," as an old reviewer justly observes, "a degree of research, acumen, vigour, and elegance, that render it a work of standard importance in English literature." A reprint, in 2 volumes octavo, was published in Madras in 1869.

Some monographs drawn up by officers of the Mysore Commission soon after the assumption of the government by the British in 1801, with kindred papers, were printed in 1861 as *Selections from the Records*. In 1855 a *General Memorandum* was prepared by Sir Mark Cubbon for the Marquis Dalhousie, and since that time *Administration Reports* have been regularly issued every year.

Other sources of information exist,* for a good deal has been written in connection with Mysore during a century back, much of it partisan; but the above were some of the chief public and authentic materials accessible for a work which had become a desideratum, namely a Gazetteer of Mysore brought up to date, presenting in a handy form and within a moderate compass all that was of interest in relation to the natural features, resources and productions of the country; its history, population, industry, administration, and any other subjects that had a claim to be treated of in such a handbook.

For the associated principality of Coorg a similar work was needed, and valuable contributions towards it were at hand: first, in the *Rajendranâme*, a history of the Coorg Rajas from 1633 to 1808, written in Kannada, under the orders of the most celebrated of them—Dodda Vira Rajendra—and translated for him into English by Lieutenant Ahercromby at Mangalore in 1808; next, in the *Memoir of the Codugu Survey*, (printed at Bangalore in 1870) a full and able description of the country by Lieutenant Connor, who effected the survey, under considerable difficulties, in the years 1815—1817; further, in the *Coorg Memoirs*, a very interesting publication by Dr. Moegling,

* I would particularly mention *Eastern Experiences*, by Mr. L. Fowling, c. s. I., late Chief Commissioner, published in London in 1871.

the first Protestant Missionary in Coorg, which was printed at Bangalore in 1855, and in 1866 appeared in German in an enlarged and amended edition; and lastly, in Captain Le Hardy's *Report* at the time of the annexation of the country in 1834, and the annual *Administration Reports* since 1860.

The first step taken towards supplying the want was in June 1867, when a circular was addressed by Mr. Saunders, c. b., the present Chief Commissioner, who was then officiating, to the Superintendents of Divisions, directing the compilation, for each District, of a *Gazetteer* similar to one then lately published of the Bhandara District in the Central Provinces. In pursuance of these orders, during the next two years, nine manuscript volumes were prepared. Only three, however, came to be printed; namely, one for Mysore District, by Mr. Wellesley; one for Kolar, I presume by Mr. Krishnaiengar, c. s. i.; and one for Coorg, by the Reverend G. Richter. Of the remainder, those for Bangalore and Kadur were not completed; the one for Shimoga bears the signature of Captain Gordon Cumming; that for Hassan of Major W. Hill; that for Tumkūr of Major C. Pearse; and that for Chitaldroog of Mr. Krishna Rao. The subsequent *Reports on the Census* of November 1871, by Major Lindsay, naturally superseded most of the statistical information contained in them.

The design to appoint an editor who should bring out one work on a uniform plan was next adopted, and eventually, in 1873, with the sanction of the Government of India, it was proposed to me to undertake the compilation of the *Gazetteer of Mysore and Coorg*. A personal acquaintance more or less with every part of the two countries, gained in the course of official duty; a familiarity with the local vernaculars; and some measure of information regarding the literature and ancient history of this part of India, derived from antiquarian studies; led me to anticipate the work with interest. But being, at almost the same time, raised to the head of the Educational Department, I found that the labours of a new office which is no sinecure, left little leisure for the extra duty imposed upon me. I was therefore forced to be content for some time with making tours to such parts of the country as I had not recently visited, and collecting information from various quarters.

However, when in 1874 Dr. Hunter, Director General of Statistics, who is charged with the editorship of the Imperial *Gazetteer* for the whole of India, visited Bangalore, I was able to lay before him the plans I had formed for the work, and at his request undertook to prepare for Mysore a manual of each District separately, which I had not at first intended, as it seemed to involve a certain degree of repetition. I am now glad that I did so, as it obliged me to go more minutely into several subjects. Dr. Hunter again paid a visit to Bangalore in January 1876, when a part of the work had been printed, and in his report to Government was pleased to express the strongest approval of what

had been done, and his "sense of the high value of the materials that had been supplied."

The Gazetteer has thus finally taken the shape of two volumes devoted to Mysore, and a third to Coorg. Of the former, the first treats of Mysore in general, the second of Mysore by Districts, eight in number. A reference to the table of contents prefixed to each volume will enable the reader to see at a glance the arrangement and distribution of subjects. Volume II, it should be stated, was printed first. As regards Volume III, I am much indebted to Mr. Richter for placing at my disposal a revised copy of the greater part of his Manual. In general the present work has been brought down to 1875, but in the portions printed after that, a few statistics of later date have been admitted. I had thought to append a short biographical notice of some of the remarkable men, both Native and European, who have been connected with Mysore, but feared it would extend the work too much, and perhaps be considered foreign to its design. The subject, however, is one full of interest.

I will not deny that the Gazetteer has caused far more labour than I had anticipated, principally owing to the demands of an extensive Department, which prevented my ever giving undivided attention to the compiling of it. But these are conditions under which much of the best work in India has been accomplished, and I gratefully acknowledge the indulgence which has been extended by Government to any apparent, but unavoidable, delay in bringing the task to completion.

With regard to all such information and statements contained in these volumes as I am not personally responsible for, I have endeavoured to make a point of mentioning throughout the body of the work the authorities on which they are based; and my sincere and hearty thanks are tendered to all who have favoured me with any information or assistance, as well as to the Press. I may add that the proofs have been seen, on the part of Government, by Major Tredway Clarke, Officiating Secretary to the Chief Commissioner.

Bangalore, Xmas 1876.

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MYSORE.

PHYSICAL GEOGRAPHY.

The State of Mysore* occupies a position physically well defined, in the South of India ; and has been termed a rocky triangle, a not inapt description. It is a table-land, situated in the angle where the Eastern and Western Ghat ranges converge into the group of the Nilgiri Hills. West, south and east, therefore, it is enclosed by chains of mountains, on whose shoulders the plateau which constitutes the country rests. On the west the boundary approaches at one part to within 10 miles of the sea, but in general preserves a distance of from 30 to 50 miles from the coast : on the east the nearest point is not less than 120 miles. The southern extremity is 250 miles from Cape Comorin. The northern frontier is an exceedingly irregular line, ranging from 100 miles south of the river Krishna on the west to 150 on the east.

The country extends between the parallels of $11^{\circ} 38'$ and $15^{\circ} 2'$ north latitude, and between the meridians of $74^{\circ} 42'$ and $78^{\circ} 36'$ east longitude, embracing an area of 27,078 square miles. The greatest length north and south is about 230 miles, east and west about 290.

It is surrounded by the Madras Presidency on all sides, except on part of the west, where the Bombay Presidency northwards and Coorg

*The name is that of the capital, properly *Mahishûr*,—from *malisha*, Sans. for buffalo, and *ûru*, Kan, for town or country,—which commemorates the destruction of Mahish-âsura, a buffalo-headed monster, by Châmunḍî or Mahishâsura Martini, the form under which the consort of Siva is worshipped as the tutelary goddess of the Mysore royal family.

Except in a passage in the Mahawanso, (see chapter on History), the designation of the country throughout Hindu literature is *Karṇāṭa* or *Karṇāṭaka* (for derivation see chapter on Language), which properly applied to the country above the Ghats. But the Muhammadans included in the name their conquests below the Ghats as well, and the English going a step further erroneously restricted it to the low country. Hence Carnatic and Canara now designate, in European works of geography, regions which never bore those names; while Mysore, the proper *Karṇāṭaka* or Carnatic, is not so called.

southwards form the boundaries. The Madras Districts bordering on it are Bellary on the north ; Kadapa, North Arcot and Salem on the east ; Coimbatore, Nilgiris and Malabar on the south ; South Canara on the west. The Bombay Districts of Dharwar on the north and North Canara on the west complete the circle. Coorg intervenes between South Canara and Malabar on the south-west.

The general elevation rises from about 2,000 feet above sea level along the northern and southern frontiers to about 3,000 feet along the central water-parting, which separates the basin of the Krishna from that of the Kávéri and divides the country into two nearly equal parts. But the surface is far from preserving the even character suggested by the designation of table-land. For the face of the country is everywhere undulating, much broken up by lines of rocky hills or lofty mountains, and scored in all parts by *nīlas* or deep ravines. There is probably not a square mile in the whole superficies absolutely flat or level, the slope of the ground ranging from 10 to 20 feet per mile in the more level portions, and as high as 60 and 80 feet elsewhere.

The country is longitudinally intersected by single or aggregated chains of hills, running chiefly north and south, or in a direction nearly parallel to the two coasts. They lie at uncertain and unequal distances from each other and accordingly form sometimes wide and sometimes narrow valleys. Isolated massy rocks, termed by Europeans *droogs*,* rearing their heads to 4,000 or 5,000 feet above the level of the sea, stand forth like sentinels on every hand ; mostly crowned with the remains of fortifications, whose position, with the advantage of an unfailing supply of water at the summit, rendered them wellnigh impregnable strongholds. Besides these, clusters or piles of naked rocks, composed of immense rounded boulders, are frequent ; large fragments being often delicately poised, like logging stones, upon some projecting point ; appearing as if a touch would overturn them and yet sometimes supporting a shrine or *mandapa*.

Natural divisions.—Mysore naturally divides itself into two separate regions, each of which has well-marked and distinctive features.

* From a corruption of the Sanskrit word *dur-ga*, literally *difficult of access*, denoting hill-fort

Of these the Malnád,* or hill country, lies to the west, and is confined to the tracts bordering or resting on the Western Ghats. It is a land of magnificent hill and forest, presenting alternations of the most diversified and charming scenery. A fertile soil and perennial streams clothe the valleys with verdant cultivation. The sheltered hill-sides are beautiful with waving woods, which give shade to numerous plantations of coffee. Higher up are swelling downs and grassy slopes, dotted over with park-like groups of trees. Above all, the gigantic mountains rear their towering crests in every fantastic form of peak. Human dwellings are few and far between. A cottage here and there, picturesquely situated on the rising ground bordering the rice fields, and hidden amid plantations of areca palm and plantain, marks the homestead of a farmer and his family. Towns there are none, and villages of even a dozen houses rare. The incessant rain of the monsoon months confines the people to their own farms. Hence each householder surrounds himself with all he needs and succeeds in making himself to a great extent independent of the external world. The conditions of this isolated life are insupportable to immigrants from the plains.

But by far the greater portion of the Province, or all to the east of a line from (say) Shikarpur to Periyapatna, belongs to the division of Maidán, Bail shíme, or open country. Although much of the intermediate region partakes of the characteristics of both, the transition from the Malnad to the Maidan is in some places very marked. Dense forests, which shut in the view on every hand, give place to wide-spreading plains; the solitary farm to clustering villages and populous towns. Man meets with man, the roads are covered with traffic and the mind feels relief in the sympathy of numbers.

The means of water-supply and the prevailing cultivation give the character to the various parts of the open country. The level plains of alluvial black soil, as in the north, growing cotton or millet; the districts irrigated by channels drawn from rivers, as in the south and west, displaying the bright hues of sugar-cane and rice fields; the lands under tanks, filled with gardens of cocoa and areca palms; the higher-lying undulating tracts of red soil, as in the east, yielding ragi and the common associated crops; the stony and wide-spreading pasture grounds, as in the central parts, covered with coarse grass and relieved by shady groves of

† Kan. *Male*, hill; *nádu*, district, region.

trees. The aspect changes with the seasons, and what in the dry and cold months, when the fields are lying fallow, appears a dreary and monotonous prospect, speedily assumes under the first operations of the plough the grateful hues of tillage ; which, under the influence of seasonable rains, give place in succession to the bright verdure of the tender blade, the universal green of the growing crops, and the browner tints of the ripening grain. The scene meanwhile is full of life, with husbandmen, their families and cattle engaged in the labours of the field. These are prolonged in stacking and threshing until the cold season again sets in and the country once more assumes a parched and dusty aspect.

River systems.—The drainage of the country, with a slight exception, finds its way to the Bay of Bengal, and is divisible into three great river systems ; that of the Krishna on the north, the Kávéri on the south, the two Pennárs and the Pálár on the east. The only streams flowing to the Arabian Sea are those of certain taluks in the north-west, which, uniting in the Sharavati, hurl themselves down the Ghats in the magnificent falls of Gersoppa ; and some minor streams of Nagar and Manjarabad, which flow into the Gargita and the Netravati.*

A line drawn east from Ballálráyan-durga to Nandidurga (Nundydroog) and thence south to Anekal, with one from Devaráydurga north to Pavugada, will indicate approximately the watershed separating the three main river-basins. From the north of this ridge flow the Tunga and the Bhadra, rising in the Western Ghats and uniting in the Tungabhadra, which, with its tributary the Hagari or Vedavati, joins the Krishna beyond the limits of Mysore in Sri Saila near Karnul. From the south of the line, the Hemavati (with its affluent the Yagachi), the Lokapávani, Shimsha and Arkavati flow into the Kávéri, which, rising in Coorg and taking a south-easterly course through the country, receives also on the right bank the Lakshmantirtha, the Gundal, the Kabbani and the Honnu Hole before quitting the territory. From the east of the line, in the immediate neighbourhood of Nandidurga, spring three main streams, forming a system which Lassen has designated 'die Tripotamie des Dekhans,' namely, the Uttara Pinákini or Northern Pennár, (with its tributaries the Chitravati and Pápaghni), which discharges into the sea at Nellore ; the

* The course of each river is described in detail in Vol. II.

Dakshina Pinākini or Southern Pennár, * which ends its course at Cuddalore; and between them the Pálár, whose mouth is at Sadras. A continuation of the east-and-west line through Nandidurga to Sunnakal will mark the water-parting between the first and the other two; which, again, are divided by a line passing from Jangamkote to Bowringpet and the Betaráyan hills.

More accurately described, the axial line or 'great divide' which forms as it were the backbone of the country starts from the north of Balláráyandurga and runs east-by-north to near Aldur. Thence it makes a bend, first, northwards up to the western extremity of the Baba Budan range and then south-east, passing between Belur and Halebid, down to Sige Gudda in the north of the Hassan taluk. From this point it strikes across the map in an east-north-east direction, rounding the southern extremities of the Harnhalli and Hagalvadi hills, up to near Kortagiri, where it encounters the great meridional chain of mountains. Following the range south, past Devaráydurga to near Dodbele, it resumes an east-north-easterly course to Nandidurga and continues the same to the frontier near Sunnakal. Geographically it lies between the parallels of $13^{\circ} 10'$ and $13^{\circ} 25'$.

A line projected north from the west of Kortagiri up through Pavugada to the frontier, and one south from Nandidurga by Bangalore to Anekal, mark pretty nearly the limits of the respective river-basins in the transverse direction. This water-parting falls between the meridians of $77^{\circ} 10'$ and $77^{\circ} 30'$.

The basin of the Sharavati, which runs to Honávar on the Canara coast, occupies the west of the Shimoga District. It may be defined by a line drawn from Kodachádri south-east to Kavaledurga, thence north-east by Humcha to Masarur, and west-north-west by Anantapur and Ikkeri to Talguppa. The streams between Kodachadri, Kavaledurga and the Agumbi ghat westwards, run down to Kondapur; and those of western Manjarabad, to Mangalore.

The following statement contains an estimate of the total length, within the Province, of the main rivers with their principal tributaries;

* Its name below the Ghats appears to be *Poni-ár* or *Ponn-ár*, golden river, *ár* being the Tamil for river. It would be very convenient were geographers to agree upon restricting the name Penna to the northern stream and that of Ponna to the southern. The former is also called Pennér (written Pennair), *éru* being the Telugu for river.

and the total area of the catchment basin under each river-system within the same limits :—

River system.	Total length of rivers.		Total area of basins.
	Miles.		Sq. miles.
Krishna	611		11,031
Kāvēri	646		9,486
N. Pennar	167		2,380
S. Pennar	32		1,541
Palar	47		1,036
Sharavati and west coast rivers ...	103		1,881

Owing to either rocky or shallow beds, none of the Mysore rivers are navigable,* but timber floats are carried down the Tunga, the Bhadra, and the Kabbani at certain seasons. Most of the streams are fordable during the dry months, or can be crossed by rude bridges formed of logs or stones thrown across from boulder to boulder. During floods and when freshes come down, traffic over the streams is often suspended until the water subsides. But throughout the rainy season they are generally crossed at the appointed ferries by rafts, basket boats, canoes, or ferry boats. Men also sometimes get over supporting themselves on earthen pots.

The *teppa* or raft is formed of bamboos tied together and merely affords an unsteady footing, the water washing freely through. The *harigōlu* or coracle is a circular basket of stout wicker work, composed of interlaced bamboo laths and covered with buffalo hides. It is 8 or 10 feet in diameter with sides 3 or 4 feet high.† The *dōni* or canoe is a

* From the following statement in Buchanan it appears that Haider attempted to establish navigation on the Tunga. "From Mangalore Haider brought to Shimoga many carpenters, and built a number of lighters of about eight tons burthen. They are strong and flat bottomed; but, as the greater part of them have been allowed to remain on the bank where they were built, I doubt not that they were found very useless. The attempt is however no impeachment on the sagacity of Haider, who having been educated in a place remote from every kind of navigation, could have no idea of what boats could perform, nor of what obstacles would prevent their utility. To attempt dragging anything up such a torrent as the Tunga would be vain; but, after having seen the boats, and known that some of them have been actually navigated down the river, I have no doubt of its being practicable to carry down floats; and on these perhaps many bulky articles of commerce might be transported."

† Herodotus notices, as one of the most remarkable things he had seen at Babylon, boats of a construction so exactly similar, that the description of one would precisely answer for the other with the single difference of substituting willow for bamboo. These boats carried the produce of Armenia, and 'the parts above Assyria' down the Euphrates to Babylon; and each boat along with its cargo carried a few asses for the purpose of conveying the returns by a shorter overland route. Boats of the description noticed by Herodotus, although apparently unknown in Greece at that period, were in after ages commonly used in Italy on the Po; and in Britain in the time of Cæsar. Boats of the same materials but of different shape are used at this time in South Wales, and the north-west of Ireland; in the former country they are named *coracle*, in the latter *corriagh* WILKS, I, 257.

hollowed log, pointed at the two ends. The *singda*, or regular ferry boat, is formed of two canoes secured together, with a platform or deck fastened upon them, and has sides turning on hinges which, let down, form a gangway for loading and unloading. All these craft are propelled by a long bamboo pole, and are dependent for their course upon the currents. But paddles are sometimes used with the canoe.

Though useless for purposes of navigation, the main streams, especially the Kávéri and its tributaries, support an extensive system of irrigation by means of channels drawn from immense dams, called anicuts,* which retain the upper waters at a high level and permit only the overflow to pass down stream. These works are of great antiquity, the large Talkad anicut, the lowest down on the Kávéri, having been constructed a thousand years ago; while the most recent, with few exceptions, are not less than three centuries old. 'The dreams which revealed to favoured mortals the plans of these ingenious works (says Wilks) have each their appropriate legend, which is related with reverence and received with implicit belief.' The channels or *kálvés* thence drawn, meander over the adjoining tracts of country on either bank, following all the sinuosities of the ground, the total length running being upwards of 1,200 miles.†

There are no natural lakes in Mysore but the streams which gather from the hill-sides and fertilise the valleys are, at every favourable point, embanked in such a manner as to form series or chains of reservoirs, called tanks,‡ the outflow from one at a higher level supplying the next lower, and so on all down the course of the stream at a few miles apart. These tanks, varying in size from small ponds to extensive lakes, are dispersed throughout the country to the number of 37,682; and to such an extent has this principle of storing water been followed that it would now require some ingenuity to discover a site suitable for a new one. The largest of these tanks is the Súlekere, 40 miles in circumference. Other large ones are the Ayyankere, Madaga kere, Masur-Madaga-kere, Vyása samudra, Rámaságara, Moti Taláb, &c., of which accounts will be found elsewhere (Vol. II.)

* From Kan. *ane ka/le*, both meaning dam, dyke or embankment.

† The anicuts and channels are fully described under the respective rivers, in Vol. II.

‡ *Kere* is the general name in Kannaḍa, but *ko/a*, *kun/e* and other terms are applied to certain descriptions.

The spring-heads called *talpargis* form an important feature of the hydrography of the north-east. They extend throughout the border regions situated west of a line drawn from Kortagiri to Hiriur and Mol-kalmuru. In the southern parts of this tract the springs may be tapped in the sandy soils at short distances apart, and the water rises close to the surface. Northward the supply is not so plentiful. In Pavugada a soft porous rock has to be cut through before reaching the water, and in the other taluks of the Chitaldroog District hard strata of rock have sometimes to be perforated. When the water is obtained, it is either conducted by narrow channels to the fields, or a *kapile* well is constructed, from which the water is raised by bullocks.

Mountain systems.—From the gigantic head and shoulders, as it were, of the lofty Nilgiri group, which commands the southern frontier, are stretched forth like two arms, in a north-west and north-east direction respectively, the Western and Eastern Ghat ranges, holding within their mighty embrace the mountain-locked plateau of Mysore. The hills of this table-land, though rarely in continuously connected chains, arrange themselves into systems crossing the country longitudinally, in directions more or less parallel with the Eastern and Western Ghats according to their proximity to one or the other; and attaining their greatest elevation between 13 and $13\frac{1}{2}$ degrees of north latitude, along the north of the watershed line dividing the Krishna and Kávéri river-systems.

The best defined of these ranges is a belt, from 10 to 20 miles wide, running between the meridians of 77 and $77\frac{1}{2}$, from the Bilikalrangan hills as their western limit, through Kankanhalli northwards up to Madgiri, and on to the frontier by way of Pavugada and Nidugal. It separates the eastern from the northern and southern river-basins. On the west, a somewhat corresponding range, not more than 10 miles in width, runs north along the meridian of $75\frac{1}{2}$ from Balláráyan-durga up to beyond Shikarpur, having on its east the loop of the Baba Budans, projecting as it were like some Titanic bastion guarding the approaches to the Malnad or highland region formed by the congeries of hills and mountains which intervene between the range and the Ghats on the west.

Intermediate between the two internal ranges above described is placed a hilly belt or chain, with considerable intervals between its com-

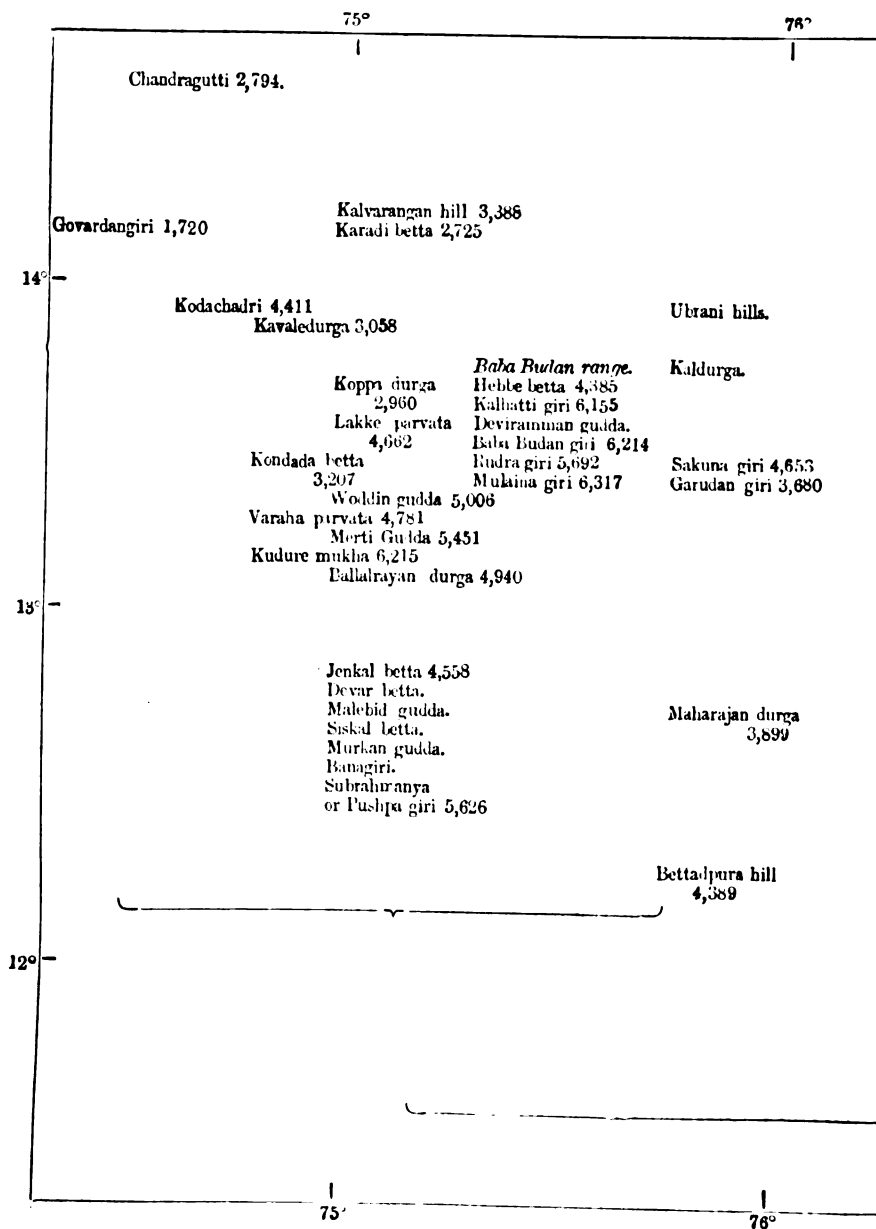
ponent parts, tending to the east on the south of the central watershed and to the west on the north of it, so as to form a very obtuse angle in traversing the centre of the country. Starting from the Wainad frontier at Gopalswami betta, between Gundlupet and Heggadadevankote, it passes by Seringapatam and Nagamangala to Chunchangiri, where exchanging its easterly for a westerly course, it reappears to the west of Kibbanhalli in the Hagalvadi hills, and crossing in a continuous belt through the middle of the Chitaldroog District, quits the country to the north of Kankuppa.

In the northern section of the territory, where the distance between the Ghat ranges, and by consequence between the intermediate belts, continues to increase, the interval is occupied by minor ranges. Of these the most important is the Nandidroog range, commencing near the hill of that name and stretching northwards by Gudibanda to Penkonda and the Bellary country. In the west, a similar medial chain, but of lower elevation, passes from the eastern base of the Baba Budans south of Sakráypatna, up by Ajimpur, the Ubrani hills and Basvapatna, between Honnali and Male Bennur, along the right bank of the Tungabhadra, to the frontier, where it meets that river.

Viewing the mountains as a whole, the Eastern and Western Ghat ranges might be compared to the antlers of a stag, the branching tynes being represented by the intermediate parallel chains starting from the north of the central watershed and more or less connected by cross ridges along their southern extremities. The chief peaks of the western system are loftier than those of the eastern. Except on the verge of the Western Ghats all the mountains throughout the country, it is believed, present their steepest escarpment more or less eastwards. In the west, Mulainagiri, and in the east, Nandidroog are the highest elevations, and they are almost on the same parallel, or between $13^{\circ} 23'$ and $13^{\circ} 24'$, immediately north of the central watershed. The loftiest points just south of that line are Ballalráyan-durga in the west and Sivaganga in the east, both situated between $13^{\circ} 8'$ and $13^{\circ} 10'$.

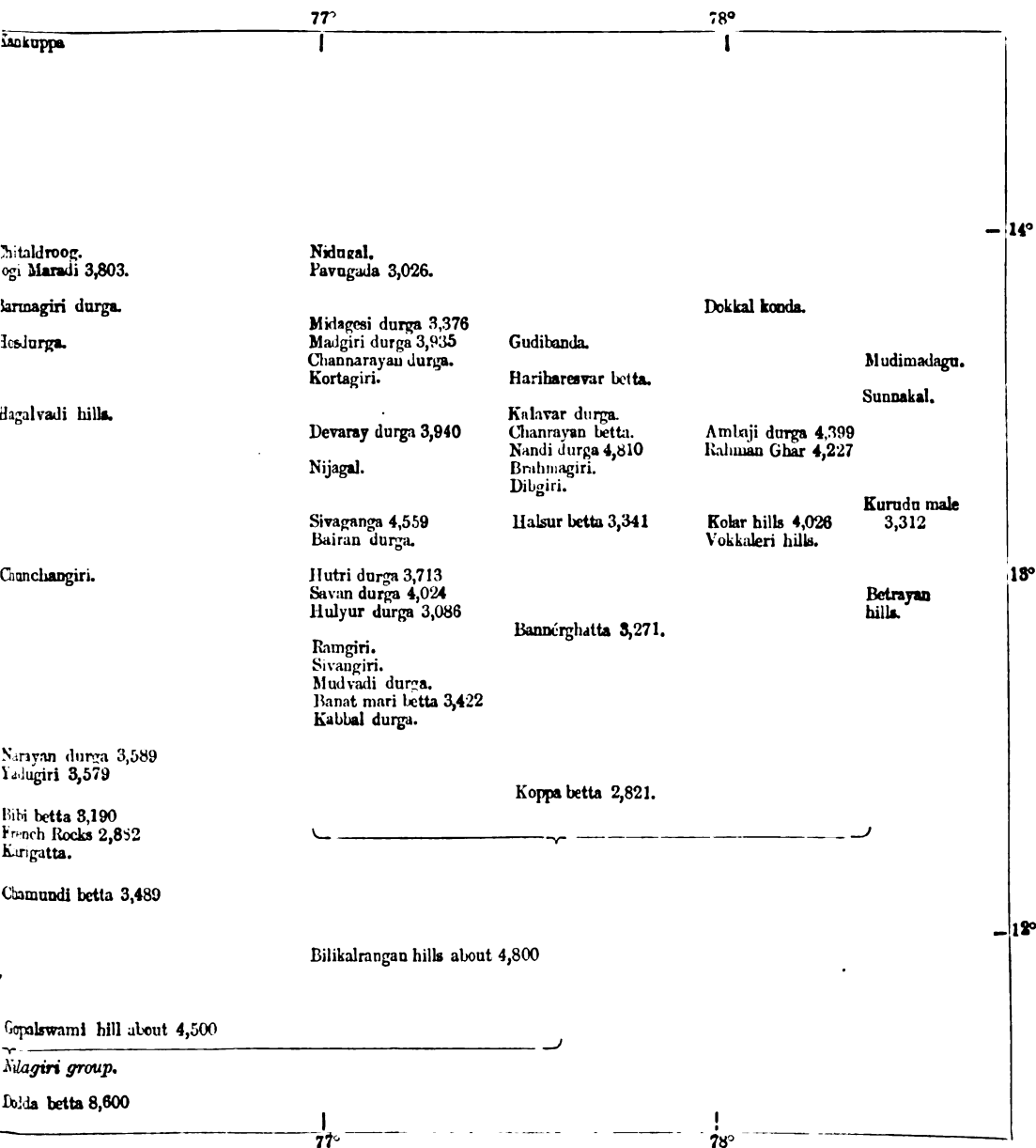
The following table will serve to shew the arrangement and altitude of the principal peaks in each system. The figures are mostly taken from the charts of the Great Trigonometrical Survey of India :—

Western System.



Central Chain.

E a s t e r n S y s t e m .



Furnished at the summit with springs which yield an unfailing supply of water, most of these heights seem formed by nature for secure retreats. Hence there are few that have not been surrounded or capped with fortifications, often carried in long lines, with a vast expenditure of labour, along all the spurs and projections of the droog, forming strongholds with good reason deemed impregnable before the time when British artillery was directed against their walls.

A particular account of the more interesting will be found under each District.

Geology.*

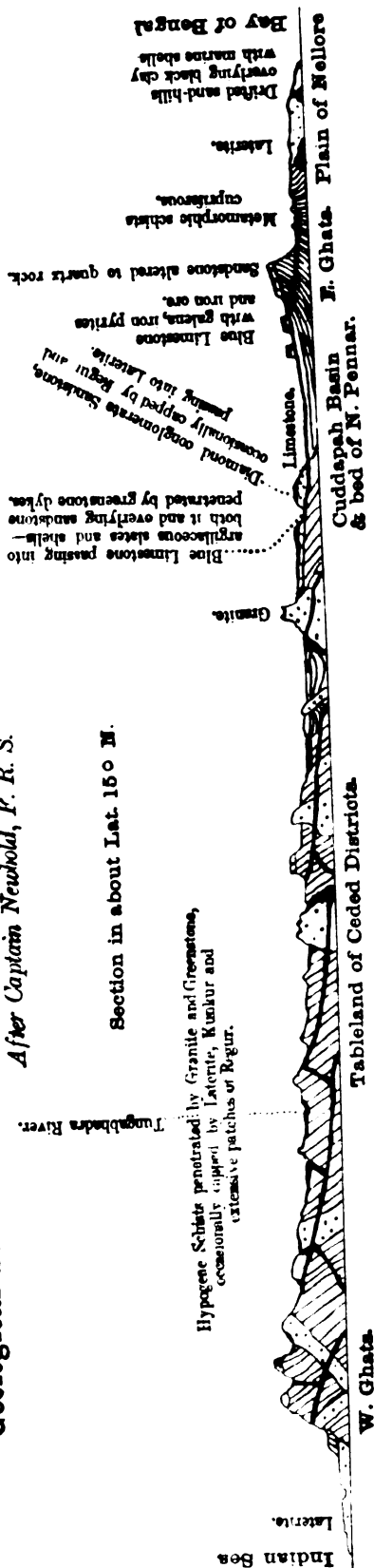
The great ranges of the Western and Eastern Ghats, together with the intervening table-lands, may be regarded as part of one magnificent elevation of Plutonic rocks by a succession of efforts, during a period which may be termed Plutonic, breaking up the hypogene schists and in some instances uplifting aqueous beds of a more recent origin. The true general direction of this elevation is nearly N. 5° W, though the apparent directions of the lateral chains on its flanks are to the east and west of north respectively.

The surface of the table-lands between these chains has a general inclination easterly by south towards the Bay of Bengal, into which the principal rivers empty themselves. This gentle inclination, often assisted by cross lines of elevation, determines the great drainage lines of the country. The singular appearance of the detached hills and clusters of hills, which above the Ghats are seen abruptly starting up from the flat plains with little or no tail, have been sometimes compared to a table with tea cups here and there reversed on its surface, a not inapt though homely illustration.

The bare extensive surfaces of the granitic, trappean and hypogene rocks in Southern India afford on a grand scale *exposés* not to be surpassed in any other portion of the globe, of the protean aspects under which these rocks present themselves. The very absence of those fossiliferous beds which so thickly encrust the surface of a great portion of Europe and many other parts of the world is in itself a subject of

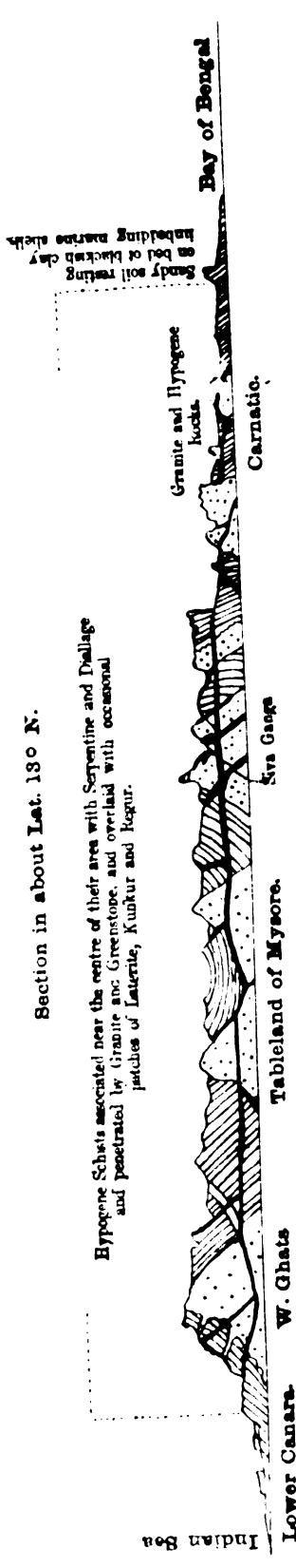
*Chiefly from articles by Captain NEWBOLD, F. R. S., on the *Geology of Southern India*.—
(J. E. A. S. viii, ix, xii.)

Geological Sections in the latitudes of Bangalore and of the Northern Frontier. After Captain Newbold, F. R. S.



Section in about Lat. 13° N.

Hypogene Schists associated near the centre of their area with Serpentine and Dallage and penetrated by Granite and Greenstone, and overlaid with occasional patches of Laterite, Kunkur and Regur.



interesting research; and the geologist may in the peninsula of India advantageously study a huge and disjointed mass of the nether-formed rocks which constitute the framework of our planet, and which here present themselves almost divested of integument, weathering under the alternations of a vertical sun and the deluging rains of the tropics.

Hypogene series.

Metamorphic Rocks.—Hypogene schists, penetrated and broken up by prodigious outbursts of plutonic and trappean rocks, occupy by far the greater portion of the superficies of Southern India. They constitute the general bulk of the Western Ghats from between the latitude of 16° and 17° N. to Cape Comorin; and from the northern base of the Eastern Ghats to their deflection at latitude $13^{\circ} 20'$ N. They are partially capped and fringed in the Western Ghats by laterite, and in the Eastern Ghats by sandstone, limestone and laterite. They form the basis of the valley of Seringapatam and of the table-land of Mysore.

The inequalities and undulations of the surface, though originating in the dislocations and flexures of the metamorphic strata at the periods of their upheaval, have been evidently modified by aqueous erosion and by the faster weathering of the softer members of the series,—such as mica and talcose schists,—the softer clay slates and shales; which, crumbling and washed away, have left their harder brethren standing out in relief on the face of the country.

Where we see gneiss, hornblende schist and quartzite rising in parallel ridges separated by valleys, we generally find the valleys occupied by the softer members of the series, often deeply covered with debris from the ridges.

Where gneiss rises above the general level of the surrounding plain, its elevations may be distinguished from those of granite, which the hills of thick-bedded varieties of gneiss sometimes assimilate, by their greater continuity and uniformity of altitude; their tendency to a smooth dome-shaped outline; and greater freedom from precipices and disrupted masses. Near lines of plutonic disturbance, however, these distinguishing marks are less perceptible.

Elevations of mica and talcose schists obtain, generally, a less altitude than those of hornblende or gneiss; and have a more round-backed and smoother contour on the whole. Yet the outline in detail is

jagged, owing partly to these rocks weathering in larger, more angular or less concentric fragments, often leaving abrupt steps and small precipices. Hornblende and gneiss are seen rising, as in the Western Ghats and the Nilgiris, to the height of 8,000 feet above the sea's level. The former is recognised by its bold sharp ridges, often precipitous, but rarely presenting conical peaks.

Hills composed entirely of actinolite or chlorite schist are seldom met with : those of quartzite have long crest-like outlines, often running smoothly for some distance but almost invariably breaking up into large, angular masses, sometimes cuboidal : the sides of the crests are usually precipitous. Hills of clay slate are distinguished by a smooth, wavy outline, separated by gently sloping valleys. Outliers or detached hills of this rock are usually mammiform. But, as before remarked, all these normal crystalline rocks, when near lines or foci of plutonic disturbance, frequently undergo great changes in physiognomical aspect ; and in lieu of the smoothly rounded hills of clay slate, and its gently sloping vales, smiling with fertility, we behold it cleaved into sterile, rugged ravines and rocky precipices.

Gneiss is usually found lowest in the series : next to it mica and hornblende schist, actinolite, chlorite, talcose and argillaceous schist, and crystalline limestone, in due succession : but to this rule there are numerous exceptions. All these rocks, except crystalline limestone, have been observed resting on granite without the usually intervening gneiss.

The strata are often violently contorted or bent in waving flexures, particularly in the vicinity of plutonic rocks ; and much irregularity occurs in the amount and direction of dip throughout the hypogene area. In the Western Ghats it is usually easterly, and at angles varying from 10° to 90° . At the summit of the Ghats near the falls of Gersoppa, the gneiss dipped at an angle of 35° to the N. E.

But the hornblende schists do not always dip from the plutonic rocks—in many instances the dip is towards them: a fact indicating that the strata have been disturbed at some previous period, or that they may have suffered inversion ; which is known to be the case in beds of more recent origin. While the dip of the two great lines of elevation, *viz.*, the East and West Ghats, is generally westerly and easterly, or at right

angles with the direction of the strata, that of the minor cross ranges is usually southerly. Numerous irregularities and exceptions, however, to this general rule occur, particularly near the northerly and southerly great synclinal line of dip on the table-lands between the Eastern and Western Ghats, and near localities where it is traversed by the cross lines of elevation. The intrusion of trap dykes has also caused much diversity in the dip. These irregularities will always prove obstacles in tracing out with accuracy the synclinal dip line between the Eastern and Western Ghats.

Gneiss and *hornblende schist* are by far the most prevalent rocks of the series: to gneiss the other members may be termed subordinate. Near its contact with the granite it commonly assumes the character of what has been styled granitoidal gneiss, losing its stratified appearance, and not to be distinguished in hand specimens from granite. Spherical and oval masses of granite, resembling boulders, are sometimes observed impacted in the gneiss. Veins of reddish compact felspar, felspar coloured green with actinolite, epidote or chlorite, with and without quartz; also of milky quartz with nests of iron ore, mica and hornblende are very common in gneiss: also dykes and veins of granite. All these veins are of older date than the intrusion of the greenstone dykes which invariably sever them. Particular varieties of gneiss prevail in different districts. These rocks not only abound in nests and veins of rich magnetic and oxidulated iron ore, but in thick interstratified beds and mountain masses of these minerals.

Mica schist is found sparingly distributed over the whole of the hypogene area in thin beds. It is found in the greatest abundance and purity in the western parts of Mysore. A vein of granite in it is rare, though abounding in those of quartz. *Talcose*, *chloritic* and *actinolitic schists* are still more sparingly distributed: the first is seen in the west of Mysore. Fine varieties of actinolitic schist occur in the Western Ghats at the falls of Gersoppa; and it is pretty generally distributed in thin beds of Mysore.

Hornblende schist ranks next to gneiss in extent and thickness of beds, and is seen washed by the sea at the bases of the Eastern and Western Ghats, forming some of the loftiest peaks of the latter and supporting large level tracts of table-land. This rock varies from the

compact structure of basalt to the crystalline texture of granite, and to that of porphyry, and may be seen from laminae of a few lines in thickness, passing into beds forming mountain masses. The principal constituent minerals are hornblende and felspar. Quartz, garnet and mica are frequently mixed.

Large beds of *compact felspar*, generally of a pinkish hue, with a little quartz and a few scales of mica, quartzite and milk quartz, having a similar direction to that of gneiss, occur forming low ranges of hills.

Clay slate does not occupy a large surface of the hypogene area. It occurs at Chiknayakanhalli, Chitaldroog and in parts of the Shimoga District.

Imbedded minerals.—Chert is pretty generally distributed, also the common garnet; the latter occurs in the greatest abundance in the Eastern Ghats but is also found in the Kempukal river at the Manjarabad Ghat; black garnet and tremolite occur in the granitoidal gneiss of Wurralkonda (Kolar District.) Epidote and actinolite are found usually in quartz and felspar veins. Indianite occurs sparingly with corundum, fibrolite and garnet in gneiss and hornblende schist in the valley of the Kaveri.

Corundum is found in Mysore in talc, mica, or hornblende schist associated with iron ore, asbestos, and sometimes indianite and fibrolite. It occurs imbedded in the rock in grains and crystals. Its principal localities are Gollarhalli near Chanraypatna, Mandya near Seringapatam, Begur, Bannerghatta, Bagepalli and other places. Fibrolite occurs but rarely with indianite and corundum. Kyanite occurs in gneiss with tremolite, pearl spar, bitter spar, almandine and staurolite.

Steatite occurs in the talcose schists in the west of Mysore; as also potstone, in beds of considerable size and veins, and more or less dispersed over the whole hypogene area; occasionally associated with nephrite. Magnesite, an almost pure carbonate of magnesia, occurs in the vicinity of Hunsur.

Mica is found universally diffused. In some parts of the Western Ghats and on the table-lands to the east, this mineral and talc are found in plates large enough for windows and lanterns, for which purpose they are used by the natives, as also for ornamental devices

and for painting on. Chlorite is rarely found uncombined with felspar, silex or hornblende. Nacrite or scaly talc is here and there met with. Adularia is found in the gneiss at some places.

Albite or cleavandite occurs occasionally throughout the gneiss districts, as also tourmaline or schorl, both black and green.

Sulphate and sub-sulphate of alumina are occasionally found in thin incrustations and efflorescences between the layers of the soft ferruginous slates into which the hornblende and mica schists pass.

Iron pyrites or sulphuret of iron is distributed in small proportions in the hypogene rocks ; but the oxides, both magnetic and hæmatitic, exist in extraordinary abundance, forming masses and large interstratified beds in mountain chains. In gneiss these ores frequently replace hornblende and mica ; alternating with quartz in regular layers. Magnetic iron ore with polarity is found in the massive state on the Baba Budan hills. Micaceous and specular iron ore are less common. A dark magnetic iron sand is usually found in the beds of streams having their origin among hypogene rocks, associated with gold dust and sometimes with menaccanite.

Iron ore slightly titaniferous is found over the whole hypogene area. The black oxide of manganese associated with iron ore is found sparingly in the hills. Antimony occurs in the Baba Budan hills, and at Chitaldroog.

Ores of silver are said to occur in Belli Betta near Attikuppa. Ainslie states that Captain Arthur discovered this metal in small quantities in Mysore, both in its native state in thin plates adhering to some specimens of gold crystallized in minute cubes, and mineralized with sulphur, iron and earthy matter, forming a kind of brittle sulphuretted silver ore.

Gold has long been found in the alluvial soil bordering on the Betaráyan hills in Kolar District. The geognostic position of gold in this and other localities appears to be in the primary schists, *viz.*, gneiss, mica slate, clay slate and hornblende schist, particularly near the line of their contact with granite or basaltic dykes, where we generally find the tendency to siliceous and metallic development unusually great. The gold is almost invariably discovered either in thin veins or disseminated in grains in the veins and beds of quartz, associated with iron ore

and sometimes platinum, and alloyed with small proportions of silver and copper, or in the tracts of alluvial soil, beds of clay and sands, with the washings of primary rocks. Mining operations have been carried on here by the natives from a remote period and abandoned. But license to prospect in the neighbourhood for gold and metallic ores has lately been granted to a European and the yield is said to be 6 ounces of gold to the ton of quartz, of which 5½ ounces is stated to be clear profit.

Plutonic Rocks.—*Granite* prevails throughout the great hypogene tracts, sometimes rising abruptly from the surface of immense level plains in precipitous peaked and dome-shaped masses; sometimes in low steppes; sometimes in great heaps of amorphous masses; at others with sharp outlines, obscured and softened down by a mantle of the hypogene schists which have accompanied its elevation. This latter occurs most frequently in continuous mountain chains, such as the Ghats; but to view this rock in all the boldness of its true physical contour, we must approach the detached ranges, clusters, and insulated masses that break the monotony of the table-lands. Here we find but little regularity in the direction of elevation. In many clusters the granite appears to have burst through the crystalline schists in lines irregularly radiating from a centre, or in rings resembling the denticulated periphery of a crater.

The most remarkable of the insulated clusters and masses of granite on the table-land of Mysore are those of Sivaganga, Sávandroog, Hutridroog, Nandidroog, Chandragutti and Chitaldroog. The rock of Nandidroog is almost one solid monolithic mass of granite, rising 1,800 feet above the plain and upwards of 4,800 feet above the sea; that of Sivaganga is nearly as high. These masses have usually one or more of their sides precipitous, or at such an angle as to be inaccessible except at few points. Most of them, like that of Sávandroog, are so steep as to admit of little vegetation, and present surfaces of many thousand square feet of perfectly naked rock, in which the veins and mineralogical structure are beautifully laid bare to the eye of the geologist.

It is not to be understood that granite is to be met with only in this abrupt amorphous form. On the contrary, it is sometimes found in immense undulating layers like lava, rising little above the general level of the country, separated by fissures and joints, and running for

a considerable distance in a given direction like a regular chain of hills. The horizontal fissures often impart a pseudo-stratified appearance and when crossed by others nearly vertical, give the whole the semblance of some huge wall of cyclopean masonry.

The cuboidal masses composing these walls weather by a process of concentric exfoliation into spheroids. This process occurs often on a grand scale, and the exfoliated portions compose segments of circles of many yards radii. This decay of lofty granitic masses produces some of the most picturesque features of an Indian landscape; its strange columnar piles, trees, and logging stones, which far excel those of Dartmoor in grandeur and in the fantastic forms they assume. Some of these piles are held together in the most extraordinary positions, and the blocks composing them are found connected by a felspathic siliceous and ferruginous paste, the result of the decay of the upper masses, washed down and deposited around the joints by the action of the rain. There they stand; some tottering on their base, leaning over and threatening every instant to topple down upon the unwary traveller; others erect, amid a ruin of debris at their feet,—silent monuments of the process of the surrounding decay. Sometimes the summits of the higher elevations are composed of immense monolith peaked masses of granite, which split vertically; the separated portions are often known to descend from their lofty position with the rapidity and thunder of an avalanche.

As the rocks waste from the summit, at their base will be usually observed a tendency to a re-arrangement of the component particles of the rock going on in the debris there accumulated. At Chitaldroog may be seen at the base of a granite cliff which tops one of the hills, a porphyritic looking mass thus formed of a reddish clayey paste, imbedding reddish crystals of felspar.

Almost every variety of this rock is found, but the prevailing granite is composed of felspar, quartz, mica and hornblende. Quartz, felspar and hornblende, the syenite of some mineralogists, is also common, and runs into the ordinary granite.

That beautiful variety called protogine, in which talc or chlorite or steatite replaces the mica, is not very common in India, but is met with in a few localities in the west of Mysore. In all these cases

chlorite and talc are the replacing minerals, the former predominating. Pegmatite, granite composed of quartz and felspar, is frequently met with ; but the variety called graphic granite is rare.

Schist granite never occurs as a mountain mass, but is found in veins or patches imbedded in ordinary granite. The same may be said of actinolitic granite, or granite in which actinolite replaces mica. The latter usually is most frequent in hornblendic granite, and the actinolite passes by insensible gradations into hornblende. The felspar of actinolitic granite is usually flesh or salmon-coloured.

Porphyritic granite, or granite having large crystals of felspar imbedded in ordinary or small-grained granite, is common. The rock of Sávandroog affords a good example of the prevailing variety. It is composed of a granite base of felspar, quartz, mica and hornblende, imbedding long pale rose-coloured crystals of felspar.

Fine granite porphyries are less frequently met with : a beautiful specimen occurs in a large vein or dyke which traverses the gneiss in the bed of the Kávéri at Seringapatam, nearly opposite the sallyport close to which Tippu was killed. It is composed of a basis of compact reddish and salmon-coloured felspar and a little quartz, imbedding lighter-coloured crystals of the same, with needle-shaped crystals of green tourmaline.

The great prevalent mineralogical feature in the granite of Southern India is its highly ferriferous nature. The mica and hornblende is frequently replaced by magnetic iron ore in grains, veins, and beds ; and sometimes by fine octohedral crystals of the same, with polarity.

Most of the minerals and ores described as occurring in gneiss are also found in granite.

The ordinary granite is traversed by veins of granites both finer and larger grained : the former pass into eurite, a rock in which all the component minerals of granite are mingled together in one almost homogeneous paste. The minerals composing the larger grained veins are often in a state of segregation and crystallization. The mica, instead of being scattered in minute scales throughout the substance of the rock, is sometimes collected in large plates nearly a foot in length (used by natives for painting on); the quartz in large amorphous nodules, or hexahedral pyramidal prisms of equal length ; and the felspar by itself.

in reddish layers and beds. The veins and beds of felspar are usually reddish, and penetrated by fissures, which give a prismatic structure: these fissures are often lined with compact felspar, coloured by actinolite, or chlorite, or with drusy crystals of the former mineral, which is also found in nests. Milky quartz is segregated into large beds forming chains of hills, usually containing nests and seams of iron ore, rock crystal, and crystals of amethystine quartz. Both oval and lenticular nests of hornblende and mica occur in granite.

Granite is seen in veins penetrating the hypogene schists. Good examples occur near Seringapatam.

In many situations granite appears to have broken through the earth's crust in a solid form; as is evident from the sometimes unaltered and shattered condition of the strata immediately in contact.

Eurite is found throughout the granite and hypogene tracts, but more frequently among the latter rocks, with which it often has all the appearance of being interstratified; in the granite it occurs in dykes. The eurite of Seringapatam may be regarded as a type of the petrosilex eurites. It sometimes passes into eurite porphyry, imbedding distinct crystals of laminar felspar.

Diallage, euphotide or gabbro, occurs at Banavar, about eight miles westerly from Bangalore, associated with gneiss and mica schist. It there presents itself in low elevations, consisting of angular rough masses of the diallage rock, half buried in a detritus the result of its own disintegration. The masses have not the slightest appearance of stratification; but are divided by fissures, like granite, into cuboidal blocks.

The rock is composed chiefly of diallage and felspar; the colours of the former varying from light and dark grey to greyish green and bright green. The felspar is white and greyish white; sometimes in distinct crystals, but generally confusedly aggregated. The general colour of the rock is light grey and greenish grey. The diallage at Banavar has more the appearance of a dyke or vein in the hypogene strata than of an interstratified bed; but no natural section of the junction line of the two rocks presents itself.

Serpentine.—Near Turuvekere a dark crystalline rock occurs, composed of a dark grey or black talcose paste, imbedding numerous small

black crystals of a mineral containing a large proportion of iron, being strongly attracted by the magnet. It bears a beautiful polish; the surface exhibiting, on close inspection, in the dark shining paste, still darker spots occasioned by the magnetic crystals. It was quarried by the sovereigns of Mysore for architectural purposes, and forms the material of the beautiful pillars which support the mausoleum of Haidar at Seringapatam.

This rock has been mistaken for basaltic greenstone, but it may be a bed of massive ferriferous potstone—here common in the talc schist—elevated, indurated, and altered by one of the basaltic dykes that traverse the rocks in the vicinity. Geologically viewed it has all the characters of a serpentine; and mineralogically it resembles the ferriferous serpentine or ophiolite of Brongniart, which consists of a magnesian paste imbedding disseminated grains of oxidulated iron.

Volcanic Rocks.—*Basaltic greenstone* is universally distributed. It prevails in hypogene areas, diminishes in those occupied by the diamond-sandstone and limestone, and totally disappears in districts covered by laterite and deposits of a more recent epoch. It is most developed in the stretch of table land between Bangalore and Bellary.

It never occurs in continuous overlying sheets like the newer trap, but penetrates in dykes the rocks just described, up to the age of the laterite. These dykes often terminate on reaching the surface of the rock, or before reaching it; while others project from the surface in long black ridges, which, originally like a wall, have since tumbled into both globular and angular fragments by disintegration. Most of the blocks usually remain piled up on the crests of the elevations, while others have lodged on their sides or rolled down to their bases. Many of these blocks have a peculiar metallic or phonolithic sound when struck; the wellknown “ringing stones” west of Bellary afford a good example. These black bare ridges of loose stones, standing out in relief against the light-coloured granite or gneiss rocks, add another striking feature to the landscape of the plutonic and hypogene tracts. They often cross the country in a thick network, particularly between Nandidroog and Bagepalli.

In many cases the protrusion of the basaltic greenstone above the general surface of the imbedding rock appears to have been occasioned

by the weathering of the latter from its sides. The greenstone thus left unsupported and exposed to atmospheric action soon breaks up by the process of fissuring and concentric exfoliation. In a few instances it appears to have been forced in a semi-solid state beyond the lips of the rent in the rock without overlapping the rock, but none of these projecting dykes have remained in that solid continuous wall-like state in which we see the prominent dykes of Souma or the Val del Bove. Their height above the general level of the country rarely exceeds eighty feet.

The direction of the main dykes appears generally to coincide with that of the elevation of the mountains ; but if we trace any dyke, the general direction of which in a course of many miles may be north and south, we shall find it to zig-zag and curve in various directions at different parts of its course.

Fragments of granite and gneiss, both angular and of a lenticular form, are sometimes entangled and imbedded in the basalt ; and have been mistaken for veins or nests of these rocks. It is evident that, in many instances, the granite and hypogene rocks were solidified prior to the great eruptions of basalt that burst up from below into their seams and fissures, and that the molten fluid imbedded all loose fragments of rock, &c., lying in them. It is probable that many of the fissures themselves were caused, or enlarged, as seen in modern volcanos, by the expansion of the molten basalt and its gases from below, while struggling for a vent.

The lithologic structure of this rock is as protean as that of granite. In the centre of large dykes we usually find it crystalline and porphyritic ; and nearer the edges, less crystalline and more compact ; in fact, every gradation of amphibolitic and augitic rocks, from basalt to melaphyre, in the distance of a very few paces. Near the sides, in the compact varieties, may be seen needle-shaped crystals of augite, glancing in confused arrangement here and there in the close texture of the basalt ; while a little nearer to the centre the augite almost disappears, and is replaced by fine large crystals of hornblende, and sometimes a few scattered scales of mica.

Near the line of contact with gneiss, the basalt often loses its dark colour, and becomes of a faint green, like some varieties of eurite or serpentine, imbedding iron pyrites. This faint green eurite is also seen as

a thin vitreous and vesicular enduit on its surface, like the scoriaceous lava found on the surface of the dykes of Etna. The cavities sometimes contain a yellowish-brown powder, which becomes magnetic before the blow-pipe; or small crystals of epidote: in one specimen was found prehnite. The surface of the compact basalt in the dykes is often scored by small fissures, which, as in the Vesuvian dykes, divide the rock into horizontal prisms and run at right angles to the cooling surfaces.

All the darker varieties of basaltic greenstone melt into a black or dark-green coloured glass or enamel; and affect the magnetic needle. They are composed of felspar, hornblende and augite, in varying proportions, and occasionally hypersthene.

The minerals most common to these are, iron pyrites, garnets, epidote, and actinolite. These minerals distinguish them from the newer trap, which abounds in zeolites, calcedonies and olivine.

The greenstone occasionally assumes the prismatic columnar forms of the newer basalts, or rather approaches to this structure; thin layers of carbonate of lime often intervene between the joints, and between the concentric layers of the globular green-stone. In many instances the basalt has a fissile structure, which, when intersected by joints, form prisms well adapted for building purposes. In some cases under the hammer, it breaks into rhomboidal fragments, the joint planes of which are marked superficially with dark-brown or blue dendritic appearances on a pale yellow or brown ground.

Rocks altered by Dykes.—Granite and gneiss in contact with a dyke usually become compact, or tough, or friable; the felspar crystals lose their brightness and a portion of the water of crystallization, become opaque and of porcelain hue; the mica is hardened and loses its easily fissile lamellar character. In gneiss it may be seen replaced by minute crystals of tourmaline, epidote and garnet, as near Chanraypatna. Limestone is converted into chert, or becomes siliceous; sandstone into quartz; and clay slate into basanite and jasper.

In districts most intersected by dykes a general tendency to crystalline and metallic development will be remarked, as well as an increase in the deposition of saline and calcareous matter, apparent in extensive layers of kunker, and efflorescences of the carbonate, muriate, and sul-

phate of soda. The fissures through which the springs charged with these minerals rise, were originally caused, perhaps, by the same disruptive forces that opened vents through the earth's crust to the molten basalt: and it is not improbable that these minerals and sulphates have their origin in causes connected with these ancient subterranean volcanic phenomena.

Frequently no alteration is to be traced in the rocks in contact with dykes; a circumstance readily accounted for when we reflect that the temperature of the injected rock is liable to great variation. In certain localities, indeed, the basalt appears to have been reciprocally acted upon by the rock it has traversed.

Aqueous Rocks.—*Sandstone and Limestone.*—Resting immediately on the hypogene and plutonic rocks are found beds of limestone, sandstone, conglomerate, argillaceous, arenaceous, and siliceous schists. Next to the hypogene schists, and the associated plutonic rocks, these limestone and sandstone beds occupy perhaps the greater portion of the area north of a line drawn through Sira to the west. They are most frequently observed exposed in the vicinity of the great drainage lines of the country and occur in irregularly-shaped patches, separated usually by broad and apparently denuded zones of the subjacent hypogene and plutonic rocks.

The tracts occupied by the limestone and sandstone beds present a diversified aspect, sometimes flat and monotonous, and at others, near lines of plutonic disturbance, bare, rugged and picturesque. The limestone in some situations has evidently been denuded of the usually superjacent sandstone, dislocated, and elevated several hundreds of feet above the general level of the surrounding country in regular ranges and often in highly-inclined strata. Caps of sandstone, though in such cases often wanting, are sometimes seen still covering the limestone peaks. The outline of these limestone ranges usually presents long, flattish-topped ridges, whose sides and summits are not unfrequently covered with detached angular blocks of the rock, with a grey, weathered, and scabrous exterior, resembling that of the mountain limestones of Europe.

The sandstone, where undisturbed by plutonic intrusion, occurs in low, flat, wall-like ranges, rising at an almost similar level, rarely exceeding 500 feet from the surface of the surrounding country, supporting

table-lands of some extent and evidently once continuous. It is often intersected by deep fissures, extending from the summit of the rocks down to the base. When disturbed by plutonic force, the sandstone exhibits a striking contrast in its outline to the tame horizontal aspect it assumes at distance from the axes of disturbance. It rises in bold relief against the sky in lofty rugged cross or hogbacked and crested hills, with precipitous mural ridges, which, rarely running at the same level for any distance, are interrupted by portions of the same ridge, thrown up at various angles with the horizon in steep and often inaccessible cliffs. When it crests the hypogene rocks, the lower part of the elevation is often composed of the latter to the height of about 200 to 400 feet, the slope of which has usually an inclination of from 15° to 20° , while that of the cap of sandstone presents a steep or precipitous declivity varying from 45° to 90° , giving a decided character to the aspect and configuration of the mountains and ranges thus formed.

The hills of arenaceous schists are to be recognized from the more massive sandstones by their undulating, round-backed summits, and their buttressed and dimpled flanks; while those of the softer slates and shales affect the mammiform outline.

Both limestone and sandstone beds, there is little doubt, were formerly of greater extent than now, and owe much of their present discontinuity and scattered positions to the agency of plutonic disturbance and subsequent denudation. The tracts of country intervening between their areas are usually occupied by granitic and hypogene rocks.

Laterite occupies a large portion of the superficies of Southern India. It is found capping the loftiest summits of the Eastern and Western Ghats and of some of the isolated peaks on the intervening table-lands. Beds of small extent occur near Bangalore and Banavasi. That at Bangalore extends northerly towards the vicinity of Nandidroog. Hills of laterite are usually distinguished by their long, low, flat-topped character, assimilating those of the trap and horizontal sandstone formations. The lands they support are, however, not so much furrowed as those of the sandstone by water channels, a circumstance ascribable to the drainage passing rapidly off through the pores of the rock. When capping detached rocks, the laterite usually imparts to the whole mass a dome-shaped or mammiform outline, or that of a truncated cone.

On the surface of table-lands it is spread out in sheets, varying from a few inches to about 250 feet in thickness, terminating on one or two sides in mural escarpments. Immense detached blocks, generally of a cuboidal shape, are often seen occurring on the flanks of the Western Ghats, and on the southern slopes of the Sondur hills, often separated and dislodged. The valleys intervening between ranges of laterite hills are generally winding, like those formed by the course of a stream, and flat-bottomed, particularly in districts where it overlies the newer trap.

The laterite varies much in structure and composition ; but generally speaking it presents a reddish-brown or brick-coloured tubular and cellular clay, more or less indurated ; passing on the one hand into a hard compact jaspideous rock, and on the other into loosely aggregated grits or sandstones, and into red sectile clays, red and yellow ochre, and white porcelain earth, plum-blue, red, purplish and variegated lithomarges. Sometimes it presents the character of a conglomerate, containing fragments of quartz, the plutonic, hypogene and sandstone rocks and nodules of iron ore derived from them, all imbedded in a ferruginous clay.

The cavities are both vesicular, tubular and sinuous ; sometimes empty, but in the lower portions of the rock usually filled, or partly filled, with the earths and clays above mentioned, or a siliceous and argillaceous dust, often stained by oxide of iron. A species of black bole, carbonized wood and carbonate of lime sometimes occur, but rarely, in these cavities. Minute drusy crystals of quartz not uncommonly line the interior.

The walls separating the cavities are composed of an argillo-siliceous paste, often strongly impregnated with iron and frequently imbedding gritty particles of quartz. The oxide of iron prevails sometimes to such an extent as to approximate a true ore of iron, and the nodules are often separated and smelted by the natives in preference to using the magnetic iron ore, which is more difficult to reduce, from its greater purity. When the whole mass is charged with iron and very vesicular (not unfrequently the case) it might easily be mistaken for iron slag. The colour of the *parietes* separating the tubes and cells, which in the less ferruginous varieties is a light brick-red or purple, changes into a liver brown, having externally a vitrified or glazed aspect ; while the surface of the interior cavities puts on iridescent hues. The walls of these cells are sometimes distinctly laminated,

The air exposed surfaces of laterite are usually hard and have a glazed aspect, and the cavities are more empty than those in the lower portion. A few inches or more below the surface the rock becomes softer, and eventually as it descends so sectile as to be easily cut by the native spades, but hardens after exposure to the atmosphere. Hence it is used largely as a building stone in the districts where it prevails, and to repair roads. From its little liability to splinter and weather, (time appears to harden it), it is a good material in fortifications.

The accumulation of the clays and lithomargic earths in the lower portions of the rock, which absorb some of the moisture percolating from above, renders the mass soft and sectile. These earths doubtless existed once in the upper cavities of the rock, from which they have been gradually removed to the lower strata by the downward action of the water of the monsoon rains. They accumulate at various depths from the surface and form impervious beds, on the depressions of which the water collects, forming the reservoirs of the springs we often see oozing from the bases and sides of lateritic hills and cliffs. Some of the tubes and cavities are *culs de sac*, and do not part with their contents ; but the generality have communication with those below them, either directly or indirectly.

Associated Minerals.—Nodular, reniform and pisiform clay iron ore occur pretty generally distributed. Large beds and nests of lithomargic earths, and white porcelain earths, are not uncommon.

Older Alluvium.—The designation of alluvium is here used in its extended sense to indicate certain beds of gravel and sand that are occasionally found covered by the regur deposit, and which occur in such situations as not to be accountable for by the agency of existing transporting powers ; simply prefixing the term “older” to distinguish it from the alluvium now forming from the disintegration of rocks washed down by the rains and springs, and transported by rivers and local inundations.

In the valleys of the Bhima, Krishna, Tungabhadra, and other large rivers are occasionally seen beds of alluvial gravel elevated beyond the highest existing inundation lines. Some of these deposits may be ascribable to shifts from time to time in the course of the river's bed ; a few to the action of rain in bringing down alluvium from the mountain sides ; but the majority appear to have been accumulated under condi-

tions not now in existence ; probably, during the slow upheaval of the Western Ghats and plateau of the Dekhan, when the water occupied a much greater extent than at present. In many places the rivers have cut their way through these deposits ; in others, channels exist of rivers, where now no water flows, or but a diminutive streamlet.

Thus the Moyar valley, which runs along the table-land of Mysore by the base of the Nilgiris, differs entirely from a common mountain glen. Though a mile or more in breadth at some points, yet it is rather a ravine or fosse cut in the plain and not hemmed in by mountains. It opens out into the lower plain of the Carnatic at the Gajalhatti pass : the sides are precipitous, and its bed very much like the deserted channel of a river. The only stream now flowing in it is the Moyar, which, even in the monsoon, does not fill one hundredth part of its breadth and height : yet, this singular excavation, extending some thirty miles in length, is unquestionably a waterworn channel. It is no fissure ; for its bed is quite solid and connected and composed of strata of the hypogene rocks.

Regur or black cotton clay.—This singular deposit, which in sheets of considerable thickness covers at least one third of Southern India, is less common in Mysore. The plains occupied by the cotton soil are in general marked by their horizontal sea-like surface and almost treeless aspect.

It covers the kunker and gravel beds just described, and is generally seen as a surface soil ; but if we examine the edges of great sheets they will generally be found to dip for some distance under the recent alluvium, which conceals and replaces them as a surface soil. It not only covers extensive plains, but the tubular summits of hills overlooking those of the sandstone and limestone, newer trap and laterite formations, far above the present drainage level of the country : it covers all rocks from the granite to the laterite and kunker, and often fills up depressions and chinks in their surface.

The purest regur is usually of a deep bluish-black colour, or greenish or dark greyish black. The quantity of iron it contains is not sufficient to account for the black colour of this soil, which may be partly attributed to the extractive or vegetable matter it contains. The regur is remarkably retentive of moisture ; a property to which is ascribable much of its fertility.

During the dry season when the crops are off the ground, the surface of regur, instead of presenting a sea of waving verdure, exhibits the black drear aspect that the valley of the Nile puts on under similar circumstances, and which powerfully remind one of the regur tracts of India. Contracting by the powerful heat of the sun, it is divided, like the surface of dried starch, by countless and deep fissures, into figures usually affecting the pentagon, hexagon and rhomboid. While the surface for a few inches in depth is dried to an impalpable powder raised in clouds by the wind and darkening the air, the lower portions of the deposit, at the depth of eight or ten feet, still retain their character of a hard black clay, approaching a rock, usually moist and cold ; when the surface dust has a temperature of 130° . In wet weather the surface is converted into a deep tenacious mud.

The purest beds of regur contain few rolled pebbles of any kind ; the nodules of kunker we see imbedded have probably been formed by concretion from the infiltration of water charged with lime ; and it is only near the surface that the regur becomes intermingled with the recent alluvium of the surrounding country, or in its lower portions where it becomes intermingled with the debris of whatever rock it happens to rest on,—trap and calcedonies in trappean districts ; granite, sandstone, pisiform iron ore and limestone, in the plutonic and diamond sandstone areas. It sometimes exhibits marks of stratification.

That the regur of India is an aqueous deposit from waters that covered its surface to a vast extent, there is little doubt : but it would be difficult to point out at the present day the sources whence it derived the vegetable matter to which in great measure it owes its carbonaceous colour, and the rocks from the ruins of which its remaining components were washed.

Kunker.—The calcareous deposit termed *kunker** is irregularly distributed in overlying patches. No tract is entirely free from it, with the exception, it is said, of the summits of the Nilgiris. It occurs, however, at the height of 4,000 feet above the sea among the ranges on the elevated table-lands. It is most abundant in districts penetrated and shattered by basaltic dykes, and where metallic development is greatest. It is perhaps least seen in localities where laterite caps hypogene or plutonic rocks.

* A Hindustani word *کُنکر* but of Sanskrit extraction, signifying a nodule of limestone or pebble of any other rock.

It occurs filling, or partially filling, fissures and chinks in the subjacent rocks, in nodular masses and friable concretions in the clays and gravels above the rocks, and in irregular overlying beds, varying from a few inches to forty feet in thickness. It has been found at the depth of 102 feet below the surface of the surrounding country, prevails alike in granite, the hypogene schists, the diamond sandstone and limestone, and in the laterite: hence the springs which deposit it must bring up their supply of calcareous matter from sources deeper beneath the earth's crust than the limestone.

The older kunker is usually of a light brownish, dirty cream, reddish or cineritious grey tint; sometimes compact and massive in structure, but more usually either of a nodular, tufaceous, pisiform, botryoidal, or cauliflower-like form. Its interior is sometimes cancellar, or slightly vesicular; but compact or concentric in the pisiform and nodular varieties. Its interior structure is rarely radiated. When compact it resembles the older travertines of Rome and Auvergne. It aggregates in horizontal overlying masses, usually intermingled with the soil without much appearance of stratification. It is broken up and used as a rough building stone in the bunds of tanks, walls of inclosures, &c., by the natives, and is universally employed to burn into lime.

In the banks of rivers it is often seen concreting in stalactiform masses round the stems and roots of grasses, which, decaying, leave casts of carbonate of lime. This lime, held in solution and suspension by existing streams, mingling with the fine particles of sand and ferruginous matter in suspension, sets under water like pozzolana; and uniting the shells, gravel, sand, and pebbles in the bed and on the banks, forms a hard and compact conglomerate.

Its origin may be referred to the action of springs, often thermal, charged with carbonic acid, bringing up lime in solution and depositing it as the temperature of the water gradually lowered in rising up to the earth's surface or in parting with their carbonic acid.

Modern Alluvia.—Where regur does not prevail, the ordinary soils are distinguished by a reddish tinge, owing to the great prevalence of oxide of iron in the rocks of which they are, in great measure, the detritus. Patches of white soil occur, and are usually the consequence of the weathering of beds of quartz, or composed of kunker, which

abounds so generally, and enters into the composition of almost every variety of soil. These white soils are characterized by sterility.

In tracts of country shaded by eternal forests, for instance the Ghats, and sub-ghat belts, a dark vegetable mould prevails,—the result of the successive decay and reproduction of vegetation for a series of ages, under the stimulating alternations of excessive heat and moisture. In such regions, where unsheltered by forest and in exposed situations, the soil is either lateritic or stony according to the nature of the subjacent rock.

At the bases of mountain ridges we usually find an accumulation of large angular blocks, composed of the same rocks as the hills down whose declivities they have rolled in weathering. At a greater distance from the base in the plain, these are succeeded by pebbles, whose reduced size, mineral composition, and worn angles proclaim them to have travelled from the same source, diminishing in bulk the further we recede from the mountains, until they pass, by the gradations of grit and sand, into deposits of a rich clay or loam. Such are the gradations generally to be traced in the modern rock alluvia, and which strikingly distinguish them from the vegetable soil of the forest tracts and the regur, which are often seen in the state of the greatest richness and fineness of composition at the very bases of the hills and resting immediately on the solid rock.

The alluvia brought down by the streams from the Western Ghats flowing easterly to the Bay of Bengal, are usually composed of silt, sand and gravel—detritus of the rocks over which they have passed: they almost always contain a considerable portion of lime derived from the springs which supply them, and from the limestone and kunker beds over which most of them flow. The alluvia of the rivers of the western coast are of a more carbonaceous and less calcareous character, owing to the greater absence of lime in the formation, and the dense forests and luxuriant vegetation which almost choke their passage.

During the hot season, when the surface of the alluvial sand in the beds of the rivers and rivulets is perfectly dry, a stream of clear water is frequently found at various depths below them, stealing along or lodging in the depressions of some impervious layer of clay or rock, to which it has sunk through the superincumbent sand. So well is this fact understood by natives, that in arid, sandy tracts, where not a drop

of water is to be seen, they will often be enabled to water whole troops of horse and cattle by sinking wells a few feet deep through the sands of apparently dried-up rivulets.

The benefit resulting from the admixture of lime into soils consisting almost solely of vegetable, siliceous, or argillaceous matter, is too well known to be dwelt on here; and it is a remarkable and bountiful provision of nature in a country like Southern India, where limestone is so rarely seen in the rocks from which a great part of its soil is derived, that innumerable calcareous springs should be constantly rising through the bowels of the earth to impregnate its surface with this fertilising ingredient.

The alluvia of Southern India are remarkable for their saline nature. The salts by which they are impregnated are chiefly the carbonate and muriate of soda, which prevail so much (particularly in mining districts,) as to cause almost perfect sterility. The carbonate appears on the surface covering extensive patches, in frost-like efflorescences, or in moist dark-coloured stains, arising from its deliquescence in damp weather or by the morning dews.

Where such saline soils are most prevalent there will be usually a substratum of kunker, or nodules of this substance, mixed with the soil; and there can be little doubt that their origin may be referred to the numerous springs rising through the fissures or laminae of the subjacent rocks, some charged, as already noticed, with carbonate of lime, and others with muriate of soda and sulphate of lime. The carbonate of soda, like the natron of Egypt, is the result of a mutual decomposition of the muriate of soda and carbonate of lime. It may be as well to remark that muriate of lime is invariably found in the saline soils of India, which are known to the natives by the term *chauhu*. The soda soil is used by the *dhobis*, or washermen, to wash clothes with, and hence is called washerman's earth; it is also employed by the natives in the manufacture of glass.

Both the carbonate and muriate of soda are found mingled in varying proportions, in white efflorescences, in the beds and on the banks of springs and rivulets.

Nitrous Soils.—Soils impregnated with nitre are found on and around the sites of old towns, villages, &c. Here a vast quantity of

animal matter must gradually have been blended with the calcareous and vegetable soil: from their decomposition the elements of new combinations, by the agency of new affinities, are generated:—nitrogen from the animal, and oxygen, &c., from the vegetable matter. The nitric acid thus produced combines with the vegetable alkali, forming the nitrate of potass, while its excess, if any, combines with the lime, forming a deliquescent salt,—the nitrate of lime. The affinity lime has to nitrogen and oxygen materially assists the formation of the acid by their combination.

The natives of India, in their rude manufactories of saltpetre, act upon these principles without being aware of their rationale. Having collected the earth from old ruins, or from places where animals have been long in the habit of standing, they throw it into a heap mingled with wood ashes, old mortar, chunam, and other village refuse; and allow it to remain exposed to the sun's rays and to the night dews for one or two years, when it is lixivated. The salt obtained is not very pure, containing either the muriate and sulphate of soda or potash, or nitrate and muriate of lime.

Nitrous soils are easily recognized by the dark moist-looking patches which spread themselves irregularly on the surface of the ground, and by capillary attraction ascend walls of considerable height. They are more observable in the morning before the sun has had power to dissipate the dews.

Auriferous Alluvia.—The alluvium brought down by the rivers flowing easterly towards the Bay of Bengal is usually silt, sand, or calcareous matter,—detritus, as before observed, of the rocks over which they pass; while that of the rivers flowing westerly is of a more carbonaceous character. Most of these alluvia are auriferous, particularly those of the Malabar and Canara coasts, but grains of gold are also found in considerable abundance in the alluvial soils of Mysore.

Betmangala lies on the eastern flank of the principal gold tract, which, according to Lieutenant Warren, who examined this district in 1802, extends in a north-by-east direction from the vicinity of Budikote to near Ramasamudra. The gold is distributed in the form of small fragments and dust throughout the alluvium covering this tract.

At Markuppam, a village about 12 miles south-west from Betmangala, are some old gold mines, worked by Tippu without success. The two excavations at this place demonstrate the great thickness, in some parts, of these auriferous alluvia. They were thirty to forty-five feet deep respectively. The following is a list of the layers cut through:—

First Mine.

1. Deep brown earth, 1½ feet.
2. Grey argillaceous earth with gravel.
3. Deep brown earth, (No. 1).
4. Hard grey and yellow clay.
5. Hard whitish argillaceous earth.

Second Mine.

1. Black argillaceous earth with gravel, 3 feet.
2. Dark brown earth with stones.
3. Hard clay, streaked black and yellow.
4. Hard large black stones, argillaceous.
5. Black earth with gravel.
6. Hard black clay.

The stones found in the hard whitish earth, No. 5 of the first mine, are described as of a siliceous nature, colour black, changing to a deep rust-colour where they seem to decay: a few parallel streaks, about which adheres a green and yellow substance, mark their value to the native miners. The metalliferous stones in the second mine differ from the above, as they also differ in the matrix. They are of two kinds, *viz.*, 1st, hard, black, and argillaceous; and 2nd, hard, white, and siliceous. A deep orange soft substance adhering marks their value. This substance appears, however, to be superficial, marking the surface into which the stone splits on being struck.

Lieutenant Warren noticed that a sort of red earth, generally two feet deep, and succeeded by a white calcareous earth of equal depth, the under stratum of which consisted of large white decayed stones, seldom failed to contain an ample proportion of metal. The average proportion of gold to earth is as one grain of the former to 120 lbs. (avoirdupois) of the latter.

There can be little doubt that the auriferous black and white stones are fragments from the gneiss, granite and hornblende schist which base this auriferous tract, and constitute the singular ridge which runs through it in a north and south direction, and which may be regarded as having furnished most of the materials of the reddish alluvium on its east and west flanks, and therefore as the true matrix of the gold. The orange-coloured stones are caused by the oxidation of the iron in the mica.

This auriferous range on the table-land of Mysore may be traced to the Eastern Ghats, southerly, by the hill fort of Tavuneri, to the south of Kaveripatnam maṭha in the Amboor valley. Two passes, however,

break its continuity near Tavuneri. To the north it appears to terminate at Dásarhoshalli; though the line of elevation, taking a gentle easterly curve, may be traced by the out-liers of the Bétaráyan hills, Amani konda or Avani, Mulbagal, Kurudu male, Rájigundi to Ramasamudra in the Cuddapah collectorate, a little west of Punganur.

Dunes.—Sand dunes are not confined to the coasts, but are seen on the banks of the larger rivers in the interior, as at Talkád on the Kávéri. During the dry season, the beds of these rivers, deriving but a scanty supply of water from perennial springs, usually present large arid wastes of sand. These are acted upon by the prevailing westerly winds, which blow strongest during the months of June, July, and August, and raise the sand into drifts, which usually advance upon the cultivation in an easterly direction.

The advance of these moving hills is usually very regular where no obstruction presents itself, such as high bushes, trees, hedges, &c., which are often planted by the natives purposely to arrest the progress of these invaders on their cultivated lands. The sand is often held together and retarded by the embraces of the long fibrous plants that grow up and are interwoven with its layers. (See account of Talkad, Vol. II.)

Travellers' Notes.

From the Bisale Ghat to Betmangala, by Captain Newbold.

At the western foot of the pass, and along the base of the Subrahmanya hill, hornblende rock containing garnets and dark-coloured mica occurs, with veins of a very large-grained granite composed of white quartz, red and white felspar, and silvery mica in very large plates: gneiss is seen on the steep face of the ghat, and hornblende rock, often coated with the red clay and its own detritus. This formation continues to the summit of the ghat.

At Huchchangi the formation is generally gneiss. One of the hills of this rock is crested by hornblende rock in large prismatic masses. Patches of laterite occur covering these rocks in various localities, and a few bosses of granite.

Near Kenchamman Hoskote I crossed the Hemavati, one of the principal tributaries to the Kávéri, in a canoe. It is about fifty paces broad, with steep banks of clay, silt, and sand with mica. Near the village, mammillary masses of gneiss project from the red alluvial soil. This rock has here lost much of its quartz, and is of that variety of thick-bedded gneiss which in a hand speci-

men might pass for granite; the felspar is often of a reddish tint. Laterite is found in this vicinity a little below the surface in a soft sectile state.

At Hassan gneiss and hornblende schist are still the prevalent rocks. Talc slate with layers of a fine greenish potstone interstratified also occurs. The mica in the gneiss near Gráma is sometimes replaced by talc and passes into protogine.

After exploring the corundum pits of Golarhalli, I passed through Chanráypatna and Bellur to Hutridurga. Granite, protogine, gneiss, talcose and hornblende schists, penetrated occasionally by trap dykes, constitute the formation, overlaid here and there by patches of laterite or kunker, on which rests the surface soil. The latter is usually reddish and sandy. Sometimes these deposits are wanting, when the substratum consists of the gravelly detritus of the subjacent rocks. At Belladaira a large bed of ferruginous quartz occurs.

The mass of granite on which stands the fortress of Hutridurga is somewhat saddle-shaped, and runs nearly north and south: it terminates abruptly at either extremity. The northern extremity, crowned by the citadel, is a sheer scarp of rock nearly 200 feet high; its base is rugged with large precipitated masses. The granite is similar to but less porphyritic than that of Sávandurga.

From Hutridurga I proceeded to Magadi, and thence ascended the stupendous mass of Sávandurga. The country for a considerable distance is wild and woody, abounding with low hills and rocks, among which a porphyritic granite prevails. A magnetic iron sand is found in the beds of almost all the rivulets. I ascended the rock from the north-east side. The major axis of the mass runs nearly east and west, and is crossed at right angles by a profound fissure, which cleaves the rock from summit to base into two distinct portions, both fortified, so as to be independent of the lower fort. It is entirely composed of a granite, which from small-grained may be seen passing into the large-grained and porphyritic varieties. Some of the crystals of reddish felspar on the Karidurga were nearly two inches long, imbedded in small grained reddish granite.

The principal rock at Táwarekere is gneiss, with fragments of iron-shot quartz, green actynolitic quartz, felspar, fragments of hornblende schist, gneiss, granite, and basaltic greenstone scattered over the face of the country, and occasionally patches of kunker.

Near Bánávár I found diallage rock, projecting in large, angular, scabrous blocks from the top and sides of a low elevation. The great mass of the rock was chiefly white felspar and quartz. The crystals of diallage were well defined, and passed from dull olive-grey shades to the lively decided green of smaragdite. There was more quartz in this diallage rock than is seen usually

in the euphotides of Europe; and the external aspect of the blocks was almost trachytic in its roughness. Not far hence, the gneiss with which the diallage is associated, apparently as a large vein, loses its mica, which is replaced by minute silver scales of graphite.

Gneiss is the prevalent rock about Bangalore, penetrated by dykes of basaltic greenstone, and occasionally by granite, as is seen near the petta and adjacent fields. The granite in these localities splits into the usual cuboidal blocks or exfoliates into globular masses. It often contains hornblende in addition to mica. The gneiss strata, though waving and contorted, have a general north and south direction, and often contain beds of whitish quartz preserving a similar direction. The strata are nearly vertical. Approaching Bangalore from the north-west, a bed of laterite is crossed, forming a hill (Oyál dinne) on which stands a small pagoda. This bed extends northerly in the direction of Nandidroog, where laterite also occurs.

In other situations, covering the gneiss and granite, a reddish loam is usually found, varying from a few inches to twenty feet in depth, containing beds of red clay, used in making tiles, bricks, &c.; the result evidently of the weathering of the granite, gneiss, and hornblende rocks. A similar formation continues to Kolar. The gneiss is occasionally interstratified with beds of hornblende schist. Granite, gneiss, and hornblende are the prevailing rocks at Betmangala. About eight or nine miles east of this the Mysore frontier is crossed into South Arcot. Kunker occurs on the banks of the rivulet near the village, both on the surface and in a bed below the alluvial soil. Efflorescences of muriate of soda are also seen in the vicinity.

From Seringapatam to Coorg, by the same.

From Seringapatam my route lay westward over a strong, kunkerous, uneven and rather sterile tract to the banks of the Lakshmantirtha.

The formation at Hunsur is a micaceous gneiss with veins of quartz, and beds of the same mineral evidently interstratified with the layers of gneiss. These beds, on weathering, leave the surface-soil covered with their angular and rust-stained fragments. Glimmering hornblende rock, veined with milky quartz, and a pale flesh-coloured felspar alternate with the gneiss. The outgoings of two or three dykes of basaltic greenstone are passed on the roadside. The surface of the country from Seringapatam gradually rises as it approaches the ghats.

The country between Hunsur and the ghats is a succession of rocky risings and falls of the surface, covered for the most part with reddish alluvial soil, over the face of which are scattered numberless angular fragments of the surrounding rocks; especially white and iron-stained quartz, and occasionally kunker. Some of these alluvia have not travelled far, since we often find the

colour of the surface-soil a true index to the nature of the rock beneath; *viz.*, dark-red or coffee-coloured soil over hornblende rock and trap; light-red to sandy soil over gneiss and granite; light greenish-grey over talc-schist; and white, or what is nearly white, over felspar and quartz rocks.

The quartz beds, being usually harder than their neighbours, are written in white bas-relief characters over the face of the country. They never weather—like the felspars, hornblendes and micaceous rocks—into clay, but usually break up into fragments by imperceptible fissures, into which water, impregnated with iron from the surrounding weathered rocks, soon insinuates itself and stains the rock. At length the particles composing the fragments themselves lose their cohesion and break up into an angular gritty sand.

At Periyapatna basaltic greenstone is seen in the bed of a nullah crossing the gneiss and hornblende rock, and veined with kunker. Large blocks of fine red granite are seen in the ruined fort walls, brought evidently from no great distance. The ghat line west of Periyapatna presents a succession of round-backed hills and smooth knobs, which continue to Virarajendrapet in Coorg. Their surface is covered with dark vegetable mould, and shaded by a fine forest, the roots of which strike into the red loam or clay on which the vegetable mould rests. It produces excellent sandalwood.

From Kolar to Harihar, by Dr. Heyne.

To the south-east of Hoskote there occur hills composed of a soft, ferruginous clay slate. They are low, flat at their tops, and mostly barren. The soil about them is a fine argillaceous red earth. Gold is found in small quantities near these hills, either mixed with the soil or interspersed in quartz stones.

Almost all the hills about Bangalore are syenitic. The inland range of the ghats is composed of syenite as well as the Eastern Ghats, with this difference, that the felspar is of a beautiful brick-red colour and the predominating ingredient. Mica also abounds in some of the hills. I have seen specimens of mica slate from mountains situated on the west side of Bangalore; but have never seen any such rock in the eastern range. The kind of rock just described, which is a very handsome stone, continues to Nijagal; but in the range that crosses the country, of which Nandidroog is the principal hill, it becomes intermediate between the syenite of the eastern and inland ranges. The felspar is more red, and the mica more conspicuous than in the Eastern Ghats; but not so beautiful as at Sivaganga and Savandurga.

Near Sira the hills seem to be all of secondary formation. They run in straight lines in various directions and are quite bare of trees; but in the wet season have a green appearance from the long hill-grass (*anthistiria barbata*)

which is almost the only vegetable that grows on them. These hills are almost constantly covered at top with a kind of magnetic iron-stone, which withstands the decomposing powers of the air and water much longer than the lower parts of the hills, which seem to be composed of ferruginous slate clay.

The lower ridges, north and west of Chitaldroog, consist of a compound in which chlorite, oxide of iron, and sometimes hornblende prevail. They often form basins of considerable size, which have a very fertile soil. Many of them are naked; but some of them are covered with fine grass, and produce trees of a middling size, of which the sandal is the most remarkable.

The great rock, which in fact constitutes the basis of the whole country, is a kind of syenite, composed for the most part of four different ingredients; namely, quartz, felspar, hornblende, and mica. The quartz has usually a dull, greyish white colour; and veins of it, from four to ten inches thick, often traverse the rock in different directions. The felspar varies in colour from a silver-white to a deep brick-red, and is the most copious constituent of the rock. The hornblende is black, very abundant, and very much given to decomposition. The mica is easily distinguished from the hornblende, even when the stone is nearly in a state of disintegration: the hornblende in that state has assumed a brown ochre colour, and has lost all lustre and cohesion; while the mica retains both its colour, lustre, and cohesion to the last, and becomes only more apparent by the progress of disintegration. This is particularly exemplified in the Mysore country where the waving high ground consists of syenite decomposed into pipe-clay, intermixed with micaceous shining particles, and grains of quartz.

The ranges of hills to which Chitaldroog belongs are exactly of the same composition. In some places the felspar is of a fine red, in others of a silvery white colour. When this rock begins to decompose, it assumes a slaty form, the layers of which are pretty thick; but as the disintegration advances, it scales off in thin laminae which are very brittle, and in them the mica is more apparent than in the fresh rock.

This rock is everywhere given to decomposition, probably on account of the great proportion of iron which it contains; and this decomposition is much farther advanced in the lower than in the higher parts of the mountains. On the summits of the hills the soundest stones are always found, because everything that has been loosened by decomposition is washed down by the monsoon rains. In the lowest part of the country, usually at some depth below the surface, the same syenitic rock occurs, almost always decomposed, and without cohesion or colour. The felspar is commonly converted into pipe-clay; the hornblende is either entirely gone, or changed into ochre; the mica still brilliant, and the quartz entire.

Granite (a compound of quartz, felspar and mica), is chiefly observed in the low country where the black soil prevails, almost always in a state of decomposition and very friable. The felspar is usually large rhomboidal, silvery or milk white; often so soft as to verge upon the state of pipe-clay. The mica is in thin plates, little affected by decomposition, of a greyish white colour and often in large pieces.

At the Gersoppa Falls, by Captain Newbold.

The precipice over which the water falls affords a fine section of gneiss and its associated hypogene schists, which dip easterly and northerly away from the Falls at an angle of about 35°. The gneiss is composed of quartz and felspar, with both mica and hornblende, and alternates with micaceous, talcose, actinolitic, chloritic and hornblende schists, imbedding (especially the latter) iron pyrites. These rocks are penetrated by veins of quartz and felspar and also of a fine-grained granite, composed of small grains of white felspar, quartz and mica. The mass of hypogene rocks has evidently been worn back several hundred feet by the erosion and abrasion of the cataract; the softer talcose and micaceous schists have suffered most. Rock basins are frequent in the bed of the river, which is worn in the rock and rugged with water-worn rocky masses.

Meteorology.

The Hindus divide the year into six seasons. Of these the first, *vasanta ritu* or spring, commences with the opening of the Hindu year in March. It is the season of love and pleasure, and is a favourite theme of Indian bards. The weather is serene and clear, the farmer's occupations are mostly over, and he has time to celebrate the yearly festivals of his gods and the marriages of his friends. The mango is then covered with the fragrant blossoms from which Manmatha, the Indian Cupid, makes his shafts, and the landscape is gay with the beautiful and sweet-scented flowers of the *kakke* or Indian laburnum. The southerly breezes that blow during the night are the voluptuous zephyrs of this vernal season.

The *grishma ritu*, literally sweating season, is the second. It is the hottest part of the year, the sun being nearly vertical. The dust of the arid fields is frequently carried up in small whirlwinds, forming what are called *pisáchis* or devils. Nightly illuminations of the ghats and hills are seen, the result either of spontaneous combustion from the

friction of bamboos against each other, or of a spark blown into the long withered grass which covers the slopes. The heat is intense and the air often still and stagnant. The sunset sky glows with the most fervid tints. It is the time of cyclones. Thunder-clouds suddenly gather, and—preceded by storms of dust, which sweep impetuously over the surface of the ground, obscuring the view for miles,—the rain, accompanied with vivid flashes of lightning close followed by startling claps of thunder, descends in large and distant drops, often mixed with hail.

These shortlived tempests prelude the grateful bursting of the monsoon, and introduce the *varsha ritu* or rainy season. The south-west monsoon blows steadily during this period and should bring with it abundance of rain. The rivers are swollen and sometimes impassable for days. The face of nature is clad in green and the ploughed fields receive the precious seed.

The *sharad ritu* or autumn next succeeds, during which the sun being again vertical in his southern declination but shedding a moderate heat, the fruits of the earth ripen. This season closes with the change of the monsoon, which is marked by the loudest thunder and heaviest rain of the year, the wind settling steadily in the north-east. The largest tanks are often filled in a few hours and a store of water obtained that will last over the succeeding dry months.

The *himanta ritu* or winter next sets in, with chilly foggy mornings and bright sunny days. The fields are reaped and the grain stacked.

The *sasi ritu* or cold season concludes the circle of the year. Piercing north-east winds dry up all trace of moisture, and clouds of dust arise from every movement over the thirsty ground. The skin is parched and feverish. But the larger trees put forth new leaves or cover themselves with a mass of gorgeous blossom.

The year in Mysore may, however, with sufficient accuracy be divided into three seasons—the rainy, the cold, and the hot. The first commences with the bursting of the south-west monsoon, at the end of May or early in June, and continues with some interval in August or September to the middle of November, closing with the heavy rains of the north-east monsoon. It is followed by the cold season, which is generally entirely free from rain, and lasts till the end of February.

The hot season then sets in, towards the beginning of March, and increases in intensity to the end of May, with occasional relief from thunder-storms.

The temperature is the most equable during the rainy months, the range of the thermometer at Bangalore at that season being between 64° and 84°. In the cold season the mercury falls as low as 50° in the early morning and sometimes rises to 80° during the day. The minimum and maximum in the shade during the hottest months are about 66° and 90°, or in extreme seasons 95°.

The observations registered at the head quarters of each District are given in Vol. II. The following figures, taken from the report of the Deputy Surgeon General, exhibit the annual means for four years at Bangalore, the only station at which the observations may be considered reliable :—

			1870.	1871.	1872.	1873.
Mean barometric pressure ...	...	...	26·910	26·927	26·911	26·929
" temperature of air ...	...	...	72·8	72·9	73·8	72·5
" " of wet bulb ...	...	...	66·2	66·2	66·2	64·2
" observed extremes } maximum ...	...	...	84·2	84·2	82·8	84·1
" of temperature } minimum ...	...	...	64·5	64·7	64·3	64·2
" humidity (saturation 100) ..	...	...	73	72	72·6	70
" maximum solar heat in vacuo ...	...	...	133·2	132	128·8	134·1
" minimum on grass ...	...	...	61·5	61·9	62·1	61·3

Situated midway between the eastern and western coasts, Mysore shares in both monsoons, the south-west and the north-east, or the *mungáru male* and *hingáru male*, the early and latter rains, as they are called in the language of the country. The former bursts at the end of May or beginning of June and is attended with distant murmuring thunder and the constant play of lightning. The rain is more continuous than heavy throughout the greater part of the country. But in the tracts verging upon the Western Ghats it is unintermitting and puts a stop to all traffic. The annual rainfall of these regions is nearly five times that of the rest of the country, the quantity diminishing rapidly as the distance from the Ghats increases.

The south-west monsoon continues till October, but the rain is generally believed to come in two bursts, separated by a break of a few weeks of cloudy weather, which usually occurs in August or September. The north-east monsoon bursts in October, often with great fury,

accompanied with vivid lightning and loud peals of thunder. The rain descends in heavy torrents which sometimes fill the largest tanks in a few hours.

The close of the rainy season in November is marked by dense fogs which prevail all over the country during December and January. They begin about three in the morning and last till seven, when they are dispersed by the heat of the sun. But in some parts fogs or rather mists follow the earlier rains. Thus about Chitaldroog from August to October the hills are obscured till nearly ten in the forenoon.

There seems to be a periodicity in the rain-fall, particularly well marked at Tûmkûr, which is situated at an equal distance from either coast and between the eastern and western mountain systems. A reference to the observations there recorded will shew that for a considerable period every sixth year was one of abundant rain. This rule is not exhibited with equal precision in the register of other Districts. But there seems to be a general impression that about one year in five is a good season for rain. And this accords to some extent with the most recent scientific discoveries; for the learned Father Secchi has, I believe, traced a connection or correspondence between the terrestrial rainfall and the solar spots which gives a period of five and six, or of eleven, years during which the mutual variation is more or less constant.*

The least quantity of rain falls throughout the tracts lying north-east from the Baba Budan range along both banks of the Vedavati or Hagari to the Chitaldroog frontier of the Province. Compared with the rest of the country this may be termed a rainless district, and the scanty fall is attributed, no doubt correctly, to the influence of the towering mass of the Baba Budan chain intercepting the moisture with which the south-west monsoon wind is charged.

‘Earthquakes’—Dr. Heyne observes—‘are never violent and by no means frequent in this country, occurring only about once in five years’. My own experience does not enable me to confirm this latter statement, but shocks have been occasionally felt in the neighbourhood of the hills running from Kankanhalli to Madgiri, as at Tûmkûr in 1865. ‘I felt

* Generally speaking, there appears a tendency with maxima (of sun-spots) to anticipate the middle time between the consecutive minima, the interval 11·11 γ being divided into two unequal sub-intervals of 4·77 γ and 6·34 γ .—CHAMBERS’ *Astron.*, 17.

one at Tímúrkú,' writes Dr. Heyne, 'on the 23rd of October 1800. It is remarkable that at the same time a violent hurricane raged along the coast from Ongole to Masulipatam. The shock was felt at Bangalore and in most other parts of Mysore; and it was stronger in the south than where I was. It seemed to come from the north, proceeding southward along the inland range of hills, and to be guided farther by those of which Sivaganga and Savandurga are the most conspicuous.'

Aerolites or meteoric stones sometimes fall. On the 21st of September 1865, one weighing $11\frac{1}{2}$ lbs fell near Maddur in the Mysore District. It is deposited in the Museum.

Cyclones in the Bay of Bengal occasionally extend their influence far inland. One of the 2nd of May 1872 was very destructive in its effects; it blew a hurricane that overturned large trees even so far west as Coorg, and was accompanied with a deluge of rain. Again on the 4th of May 1874, when a cyclone was raging on the Madras coast, a steady rain poured at Bangalore without intermission for about 48 hours. It had been preceded for several days by a still and hazy appearance of the atmosphere.

FLORA.

The situation of Mysore within the tropics, combined with an elevation which gives it a temperate climate, and its almost complete environment by lofty mountain chains, are features which contribute to the formation of a rich and varied flora.

*The *forests* of the country, which yield a considerable item towards its revenue, have been estimated to cover a total area of 2,870 square miles, exclusive of scrub jungle which grows on much of the waste land. They may be roughly divided into evergreen and deciduous forests; which again are distributed in three distinct forest belts, of very unequal width, and running north and south. These are the evergreen belt, the dry belt, and an intermediate one, combining some of the features of both, which may be called the mixed belt.

The *evergreen belt* of forests is confined to the west, and comprises the country in the Western Ghats and below them, extending from the north of Sagar taluk to the south of Manjarabad. Its greatest width, which is at its northern extremity, nowhere exceeds from 12 to 14 miles, and at some points is not more than six. The tree vegetation is magnificent. Many of the hills are covered to their summits with heavy forest, while the valleys and ravines produce trees which can scarcely be rivalled in India,—so luxuriant is their growth, so vast their height, so great their size. In some parts the undergrowth is dense, elsewhere the forest is open, and on all sides trees with clear stems to the first branch of from 80 to 100 feet meet the eye.

The following are some of the more valuable trees growing in this belt :—

Artocarpus hirsutus	...Wild jack...	...	Yields the anjili wood of the western coast used for house-building, ships, &c.
Calophyllum elatum	...Poon ...	...	Yields spurs; wood reddish and coarse-grained.
Diospyros ebenum	...Ebony tree	...	Yields a variety of ebony.
Erythroxylon sideroxyloides	Red cedar	...	Wood flesh-coloured and fragrant.
Garcinia pictoria	...Gamboge tree	...	Yields excellent gamboge, with more colouring matter, more resin and less gum than the gamboge of commerce.

* Based chiefly upon Captain Van Someren's Report for 1869—70.

<i>Lagerstromia reginae</i>		...	Wood reddish, tough and very durable under water; much used for building and boats, and in the Madras gun carriage manufactory.
<i>Soymdia febrifuga</i>	...Redwood ...	...	Wood dull red, hard and heavy. Very durable and hence used in the woodwork of temples.
<i>Vateria indica</i>	...White dammer tree.	Dúpada mara	A magnificent tree. Yields the piney gum resin, a varnish resembling copal.

The *mixed belt* of forest extends the whole length of the Province, from the extreme north of Sorab taluk to Bandipur in the south of Gundlupet taluk. It is very unequal in width, varying at different points from 10 to 40 or 45 miles. It includes the greater number of the timber-producing State forests, large tracts of District forests, and much sandalwood. In it are the káns of Sorab and other portions of Nagar, the areca nut and cardamom gardens of western Mysore, the coffee plantations of Nagar and Manjarabad, and the rich rice-flats of Ságar, Nagar Kavaledurga, Chikmagalur and Heggaddevankote. The division between this rich and productive belt and the far less useful strip to the west of it cannot be very easily defined. The presence of a number of fine *nandi* and blackwood trees, which grow abundantly and attain great size on the eastern confines of the evergreen belt, form a sufficiently clear line. The eastern limit may be taken to be a line which, commencing near Anavatti in the north, would run south-east to half-way between Shikarpur and Honnali; thence due south to Sakrebail, where it turns due east till it reaches a point north of Lakvalli; thence south, through Lakvalli and along the eastern crests of the Baba Budans to Vastara; on through Pálya, and passing a few miles west of Arkalgúd and Peryapatna it turns south-east to Antarsante, and so by way of Kurnagal reaches Bandipur.

The tree vegetation varies considerably in the large extent of country comprised in this belt. All along the western confines, where it approaches the Ghats, trees proper to the evergreen forests occur frequently. The wild jack, the *dúpa*, the redwood and sometimes the poon are met with in varying quantities. But in the south Ashtagram portion of the belt, wild jack and poon are unknown. The following is a list of the more important trees found throughout this tract:—

<i>Acacia odoratissima</i>		...Bilvára	...Timber hard and strong: suited for naves and felloes of wheels.
„ <i>speciosa</i>	... Sirissa	...Bági...	...Timber light-coloured, hard and close-grained: used for furniture, picture frames, &c. The tree yields a valuable gum. The leaves are a good fodder for cattle.

<i>Bombax malabaricum</i>	Silk cotton tree	...Bórada mara	...A most imposing tree: wood soft and of little value.
<i>Conocarpus latifolius</i>	...	...Dindiga	...Timber good, and if kept dry said to be very durable. Reckoned nearly as good as teak for house and ship building.
<i>Dalbergia latifolia</i>	Blackwood	...	...Much used for furniture, and resembles rosewood when polished.
<i>paniculata</i>	...	...Pachári	...
<i>Dalbergia sissooides</i>	...	...Biridi	...Yields light and strong timber.
<i>Dillenia pentagyna</i>	Sissu	...Kalketa	...Wood close-grained; used in Assam for canoes.
<i>Embllica officinalis</i>	...	...Nelli...	...The fruits are known as emblic myrobalans.
<i>Gmelina arborea</i>	...	...Kuli ..	...Wood light and strong; used for drums, chairs, carriages, &c.
<i>Grewia</i> sp.	...	...Jani	...
<i>Inga xylocarpa</i>	...	...Jambe	...Hard and durable wood; used for plough-heads and ship's knees.
<i>Lagerstroemia microcarpa</i>	...	...Nan li	...Wood light-coloured, straight and elastic; much used for building purposes.
<i>Michelia champaca</i>	Champuka	...Sampige	.. A favourite tree of Hindu poetry, well known for the fragrance of its blossoms which are worn in the hair, &c.
<i>Nauclea cordifolia</i>	...	...Arsintega	...Wood like that of the box-tree; very close-grained, light and durable, but soon decays if exposed to wet.
<i>parviflora</i>	...	...Kadega	...Do do
<i>Pterocarpus marsupium</i>	Kino tree	...Horne	...Yields a gum called kino; wood dark-coloured and little inferior to teak. Suitable for venetian blinds, weatherboards, &c.
<i>Rottleria tinctoria</i>	...	...Hulvati or Námadári	Yields the dye called kapila used all over India for silk to which it imparts a fine yellow or orange tint.
		Honal	
		Mashi	
<i>Schleichra trijuga</i>	...	...Ságade or chencála	
<i>Sterculia villosa</i>	...	...Shi-anvige	...Bags and ropes are made of the fibrous bark.
<i>Tectona grandis</i>	Teak*	...Tyágula mara...	...Perhaps the most useful timber in India, on account of its well-known strength and durability and its resisting the attacks of white ants.
<i>Terminalia chebula</i>	...	...Alde	..Yields gull nuts from which ink is made, and yellow and black dyes. Timber good, used for agricultural purposes.
<i>tomentosa</i>	...	...Matti	...Timber used for shafts and other things requiring tough fibre. Yields a gum used as an incense and cosmetic; a black dye is obtained from the bark.
<i>Ulmus integrifolia</i>	Indian elm	...Tapasi	..Timber good; used for carts and door frames.
		Ken latsal	
<i>Vitex alata</i>	...	...Navaládi	...Yields good timber.

The bamboo abounds in the large forests, and the following are also common :—

<i>Acacia arabica</i>	...	Babul	...Gobli or jáli
<i>leucophlea</i>	...	...	...Topál or Noyi
			bela
<i>Egle marmelos</i>	...	...	...Pápatre
<i>Eutea frondosa</i>	...	Bastar teak, Muttuga	...The leaves used as plates.
<i>Eugenia jambolana</i>	...	Jamun	...Wood dark-red, tinged hard and close-grained: brown dyes obtained from bark.
		...Nérde	

*The finest teak is found in the State forests of Lakvalli, Bisavalli, Kikankóte, Begur and Amur Márigudi.

<i>Feronia elephantum</i> ...	Wool apple...Belada mara	...Yields a gum resembling gum Arabic: pulpy part of the fruit edible; wool white, hard and fine-grained, suited for ornamental carvings.
<i>Ficus indica</i> ..	Banyan ...A'lala mara	
" <i>glomerata</i>		
" <i>religiosa</i> ...	Peepul ...Arali, rági, as-vatta mara	...A sacred tree.
<i>Ficus rupestris</i>		
<i>Mangifera indica</i> ...	Mango ...Máyina mara	...Well known for its delicious fruit.
<i>Phoenix sylvestris</i> ...	Wild date ...Ichalu "	...From the juice is produced the toddy and arrack of the country; good mats are made from the leaves.
" <i>farinifera</i> ...	Dwarf date ...	Mats and baskets made of the leaves, the farinaceous substance in the stem is eaten in times of scarcity.
<i>Tamarindus indica</i> ...	Tamarind ...Hunase "	...All parts of the tree are useful: the timber for building, the leaves for dyes, the fruit in cookery and medicine.
<i>Zizyphus glabrata</i> ...		Leaves used in medicine.

The third or *dry belt* lies to the east of the mixed forest belt, and includes the far larger portion of the Province. The tree vegetation is much inferior to that immediately to the west, the change being in some parts gradual, in others very marked. The latter is especially perceptible near the Baba Budan hills, which from their elevation arrest much of the rain which would otherwise pass to the east and north-east. The difference between the abundant vegetation of the Jagar valley to the west, and the scanty vegetation to the east, of the Kallhatti hills in the Baba Budans is remarkable.

Many of the trees found in the mixed belt are common to this third tract, but as a rule they are of smaller growth. This is specially noticeable in teak, which is only met with stunted, twisted and small; in some of the *combretaceæ* and very marked in some of the *leguminosæ*.

Besides the different kinds of *figus*, the mango, tamarind and jamun, the hippe (*bassia latifolia*) and jack (*artocarpus integrifolia*) grow well. The acacias of the preceding list, the wood apple, bel tree and pachári also thrive. The wild date (*phoenix sylvestris*) grows in the western parts and the dwarf date (*phoenix farinifera*) in the centre and west. The custard apple (*anona squamosa*) grows wild rather abundantly in the waste lands of the Sira taluk. Among others the more valuable and common trees are:—

<i>Acacia myriophylla</i> ...	...	Kagli	
<i>Alangium decapetalum</i> ...	...	Ankole	...Wood said to be beautiful and strong.
<i>Bignonia chelonoides</i> ...	...	Betta pádri	
" <i>falcata</i> ...	...	Udi	
<i>Chironia glabra</i> ...	...	Marakallu	
" ...	...	Kamrakh	
<i>Conocarpus latifolius</i> ...	...	Dindiga	
<i>Dalbergia</i> sp. ...	...	Hasar ganni	

<i>Diospyros</i> sp.	Tuparu	
<i>Gardenia gummifera</i>	Bikke gila	...Yields a yellow resin similar to gum elemi.
<i>Hartwickia binata</i>	Karáchi	...Timber reddish, very hard, strong and heavy.
<i>Ixora arborea</i>	Gorivi	
<i>Lagerstrœmia parviflora</i>	Cheninge	...Wood light-brown, close-grained, straight and elastic: used for building, ploughs, axe handles, &c.
<i>Morinda</i> sp.	Matti	
<i>Pongamia glabra</i>	Houge	...Oil expressed from the seeds is used in medicine and for lamps by the poorer classes; the leaves are a strong manure for sugar cane.
<i>Senecarpus anacardium</i> . Cashew	Guru	
<i>Vatica lacifera</i>	Jálari	
<i>Zizyphus xylopyra</i>	Challe mara	...Wood orange-coloured, light and hard; fruit used to blacken leather and make blacking.
„ jujuba	Yelchi „	...Wood used for sandals; fruit edible.

Among shrubs and useful bushes are :—

<i>Calotropis gigantea</i>	...	Yields a very strong fibre.
<i>Carthamus tinctorius</i>	Safflower	Kusumba
		...The flowers yield several dyes: a light yellow oil is obtained from the seeds, used for cooking and for lamps.
<i>Cassia auriculata</i>	...	Tangadi
		...The bark is used for tanning leather and dyeing it buff the root is used in tempering iron with steel.
„ fistula	The Indian laburnum	Kakke
		...Pulp of the seeds used medicinally; bark for tanning.
<i>Jatropha curcas</i>	...	Mara haralu

The sandal tree (*santalum album*),— which grows principally in the Mysore and is a State monopoly, yielding the largest share of the forest revenue,—is found all over the country, but grows very unequally in different parts. It is never met with in the evergreen belt or in heavy forests of the mixed belt, but is most abundant along the eastern skirts, of the last named tract; in the taluks bordering on the Kaveri; and in those lying along the chain of hills which runs from Kankanhalli up to Madgiri. In the Chitaldroog and Kolar Districts it is very scarce.

The tree attains its greatest bulk and height in taluks with a moderately heavy rain-fall, but the perfume of wood grown in such localities is not so strong as of that grown in more arid spots, especially where the soil is red and stony. It will thrive among rocks where the soil is good, and trees in such places though small are generally fuller of oil. The bark and sapwood have no smell, but the heartwood and roots are highly scented and rich in oil. The girth of a mature tree varies according to circumstances from 18 to 36 or in exceptional cases 40 inches. It attains maturity in about 25 years. The older the tree, the nearer the heartwood comes to the surface; while the bark becomes deeply wrinkled, is red underneath, and frequently bursts, disclosing in old specimens the absence of all sapwood.

The heartwood is hard and heavy. The best parts are used for carving boxes, album covers, desks and other useful and ornamental articles. The roots (which are the richest in oil), and the chips go to the still; while the Hindus who can afford it shew their wealth and respect for their departed relatives by adding sticks of sandalwood to the funeral pile. A very large quantity was used up in this way at the cremation of the late Mahārāja of Mysore. The wood either in powder or rubbed up into a paste, is used by all Brahmans in the pigments used in their distinguishing caste marks. The oil forms the basis of many scents, and is sometimes used for disguising with its scent articles which, being really carved from common wood, are passed off as if made from the true sandal. The far greater portion of the wood sold yearly in Mysore is taken to Bombay.

The following timber trees mentioned in Major Beddome's *Flora Sylvatica* are also found in Mysore :—

<i>Acacia catechu</i>	...	...	...Yields catechu or terra japonica; wood used for agricultural purposes and sugar-mills.
" <i>farnesiana</i>	...	Jalli	...Yields good gum; a perfume is distilled from the flowers; wood very hard and tough; used for tent pegs, &c.
" <i>ferruginea</i>	..	...	...Bark used in medicine.
" <i>sundra</i>	...	...	...Yields a resin; wood dark red, close-grained, very hard and heavy; suited for piles and sleepers, and used by natives for posts in house building.
<i>Aglaia roxburghiana</i>			
<i>Alangium lamarekii</i>	...	... Ankola	
" <i>hexapetalum</i>			
" <i>tomentosum</i>			
<i>Albizzia amara</i>	...	...	...Wood dark brown, mottled, strong and fibrous; superior to teak in transverse strength; much used for building by the natives and as fuel for railways in Southern India.
" <i>lebbek</i>			
" <i>odoratissima</i>			
" <i>stipulata</i>	...	...	...Wood close-grained and strong; suited for furniture.
<i>Alstonia scholaris</i>	...	...	...Wood used for schoolboys' writing boards, whence the name.
<i>Anogeissus latifolius</i>	...	...	...Wood very hard and durable if kept dried.
<i>Aporosa lindleyana</i>	...	... Surroli	
<i>Bignonia xylocarpa</i>	...	...	...Wood brownish-yellow, rather close-grained, takes a good polish and is used for cabinet purposes.
<i>Boswellia glabra</i>	...	...	...Yields a resin used as incense and as medicine.
<i>Careya arborea</i>	...	... Kumli	...Wood being flexible is used for hoops, and sometimes for drums.
<i>Cedrela toona</i>	... Indian mahogany		...Wood resembles mahogany and is used for furniture; flowers used for dying-cotton red.
<i>Chickrassia tabularis</i>	... Chittagong wood,		...Wood very close-grained, light-coloured and elegantly veined: much used for furniture.

<i>Chloroxylon swietenia</i> ...	Satin wood ...	...Wood like box and close-grained: used for naves of wheels in the gun carriage manufactory at Madras: takes a good polish and well suited for picture frames.
<i>Cochlospermum gossypium</i> ...	...	...Seeds covered with silky cotton; the tree yields a gum.
<i>Cordia wallichii</i>		
" <i>tomentosa</i>		
<i>Colbertia coromandelina</i>		
<i>Cratæva religiosa</i>		
<i>Dalbergia emarginata</i>		
<i>Diospyros embryopteris</i>		
" <i>glutinosa</i>		
<i>Euphorbia longava</i>		
<i>Grewia tiliaefolia</i> ...	Tadasal or bûttâle	
<i>Guatteria cerasoides</i> ...		...Wood whitish and close-grained, used in carpentry.
<i>Goazuma tomentosa</i> ...	Bastard cedar	
<i>Gyrocarpus jacquini</i> ...		...Very light wood and preferred for catamarans: used for toys, &c.
" <i>americana</i>		
" <i>asiaticus</i>		
" <i>acuminatus</i>		
" <i>sphenopteris</i>		
" <i>rugosus</i>		
<i>Hardwickia pinnata</i>		
<i>Hemigymnos canescens</i>		
<i>Lagerstræmia lanceolata</i>		
<i>Macaranga tomentosa</i> ...	Chentakanni	...Yields a gum of a light crimson colour, which has been used for taking impressions of coins, &c: the leaves are a good manure for rice fields.
<i>Machilus macrantha</i>		
<i>Melia composita</i>		
" <i>robusta</i> ...		...Wood used by planters for building purposes. It is said that white ants will not attack it.
" <i>superba</i>		
" <i>azadirachta</i> ...	Neem-tree ...Bovina mara	...Wood resembles mahogany; mottled, hard and heavy. It is as durable and insect proof as camphor wood. From the seeds oil is obtained for lamps and for dyeing cotton cloths. The bark and leaves have a variety of medicinal uses.
" <i>azadarach</i> ...	Turaka bevu	
<i>Meliosma arnottiana</i>		
<i>Moringa pterygosperma</i>		
<i>Nauclæa orientalis</i> ...		...Wood light chestnut, fine and close-grained. Rots if exposed to wet.
<i>Ochrocarpus longifolius</i> ,		...Flower buds used for dyeing silk and for a perfume resembling that of violets. Fruit pleasant to the taste.
<i>Odina wodier</i> ...	Shimti	...Valuable timber tree; yields large planks, and is not touched by white ants.
<i>Pentaptera glabra</i>		
" <i>coriacea</i> ...	Matti	...Wood strong, hard and heavy; used for making the solid wheels of buffalo carts and for railway sleepers.
" <i>crenulata</i> ...		
" <i>tomentosa</i>		
<i>Polyalthia cerasoides</i>		
<i>Pœciloneuron indicum</i> ...	Kirballi	
<i>Prosopis spicigera</i>		
<i>Sandoricum indicum</i>		
<i>Sapindus emarginatus</i>		
<i>Saraca indica</i>		
<i>Spathodea falcata</i>		
<i>Sterculia guttata</i>		
<i>Stereospermum chelonoides</i> ...		
<i>Terminalia crenulata</i> ...		
" <i>glabra</i> ...		
" <i>coriacea</i> ...		
" <i>alata</i> ...		

} Same as *Pentaptera* above mentioned

Thespesia populnea
Turpinia nepalensis
Uvaria cerasoides
Vateria malabarica ... Faini
Wormia bracteata

Of fruit trees grown in native gardens, the following are the more important. Most of them are too well known to need description :—

Amacardium occidentale .Cashew ... Geru, Geru mara. The nut yields cardole oil, an effectua preventive of white ants. From the trunk is obtained a transparent gum; the juice from an incision in the bark stains linen so that it will not wash out. The kernels of the fruit are edible and wholesome.

Anona reticulata ... Bullock's heart ... Pám phal
 „ *squamata* ... Custard apple ... Sita phal
Artocarpus integrifolius Jack ... Halasina mara... Jackwood is well adapted for furniture of all kinds and also yields a yellow dye. The fruit is a favourite article of food among the natives, the leaves given to goats and cattle are said to be very fattening.

Averrhoa carambola ... Carambola ... Kamarek ... The fruit makes good pickle and syrup; the juice removes iron mould from linen: leaves and roots used in medicine.

Bromelia ananas ... Pine apple ... Anánas
Carica papaya ... Papay ... Perangi ... The fruit is both eaten and pickled. Its juice has some remarkable properties in hastening the decay of muscular fibre. Meat hung under the tree for 2 or 3 hours becomes quite tender.

Citrus aurantium ... Orange ... Kittali
 „ spec ... Sweet orange ... Si kittali
 „ var ... Musk orange ... Kiri kittali
 „ *decumana* ... Pumpleness ... Chakotne
 „ *limonum* var ... Lime ... Nimbe
 „ *medicus* Citron ... Gaja nimbe
 „ *dubla*... ... Hérále
 „ spec Málála

Cocos nucifera Cocoa nut palm .Tengina mara
Eriobotrya japonica ... Loquat ... Lakóte
Eugenia jambos ... Rose apple ... Pun nerale ... Fruit has the flavour of an apricot
Ficus carica... Fig ... Anjura
Mangifera indica ... Manzo ... Mávina mara
Musa paradisiaca ... Plantain ... Bále
Phyllanthus cherimella ... Kiri nelli
 „ *emblica* ... Nelli ... The fruits are known as emblic myrobolans.

Psidium pyrifera Guava ... Shépe
Punica granatum Sweet pomegranate. ... Si-dálímbi
 „ *variatio acid.*
 et dulcis ... Sour „ ... Huli-dálímbi
Pyrus malus, var ... Apple ... Sévu
Vitis vinifera ... Vine ... Drakshi

The best oranges are imported, and are the produce of Sautgur near Vellore, or of the Sherveroy Hills, &c. The loose-jacket orange is obtained from Coorg. Of cocoa nuts a rare variety is produced at Honnavalli in Tunkur District, which, on account of the delicious sweet flavour of its milk, is called Ganga-páni, or water of the Ganges. The dried kernel of cocoa nuts is a great article of export from the central parts of Mysore.

Of mangoes there are many varieties, bearing the following names : *gōl káyi* (the most common, roundish), *bádúmi* (almond shaped), *rasapuri* (reddish pulp), Chittur (grown at that place), *jíriye* (has the scent of cummin seed), *pích káyi* (small kind), *kari káyi* (black fibres in the skin), *giñi múli* or *giñi mávu* (shape of a parrot's beak), *gunge mávu* (generally has a bee in the stone), *salikare* or *shi mávu* (sweet kind), *chit káyi* (small kind), *huñi mávu* (used only for pickle).

Plantains are very plentiful and a favourite article of diet. The most esteemed are *rasa bále* and *rája rasa bále* (with a yellow custard-like pulp), *puṭṭa bále* or *puṭṭa sugandha bále* (a small sweet plantain, the Guindy plantain), *madhuranga*, *gujja*, *china*, and *gúlúr bále* (all butter plantains), *chandra bále* (red plantain), *sakalúti bále* (red and cottony), *pachcha bále* (green when ripe), *hávu bále* (long and slender), *yclakki bále*, *arisina bále*, *úne bále* (a very large kind), *kalyáni bále* (very large and coarse), *búli bále* (greyish, used only for cooking), *kádu bále* (the wild plantain).

The grapes though sweet are small, owing probably to want of attention in thinning out the clusters. Both green and purple varieties are grown. Those from the neighbourhood of Seringapatam are the most highly esteemed. Apples are cultivated principally in Bangalore for the European market, and grow to great perfection. The different varieties are distinguished by numbers indicating the order in which they were introduced.

The following are names of *vegetables* of which the leaves are used by natives in curries and stews. Some of these vegetables are cultivated, while others grow wild. The leaves only are used in curries or boiled with chillies to be eaten along with rice.

Amaranthus oleraceus ...	...	Country greens ...	Soppu.
" dozlakura ...	...	" Doggali soppu.	
" chilakatotakura ...	...	" Chulki	"
" oleraceus ...	...	" Dantu	"
" oleraceus candidus ...	...	" Bili	"
" quoitakura ...	...	" Harive	"
" cherikura ...	...	" Chikke	"
Achyranthes muricata ...	...	" Akvi gora ji.	
" triandra ...	...	" Ponnaganti	"
" lanata ...	...	" Guddahatto soppu.	
Arum esculentum ...	...	" Kesave	"
Aeschynomene grandiflora ...	...	" Acuse	"
Basella rubra and alba and var ...	...	" Dolla bachechali.	
Boerhavia diffusa ...	...	" Bilavarga.	
Cassia tora			
Canthium parviflorum			

Chenopodium virid	...	...	...	Khakótne soppu.
Coriandrum sativum	...	...	...	Cottambari "
Cleome pentaphylla	...	Coriander	...	Narobeda.
Convolvulus esculentus...	...	...	...	Tutti soppu.
Corchorus olitorius	...	...	...	Kotna goraji.
Hyperanthera morunga	...	Morunga	...	Nugge soppu.
Hibiscus cannabinus	...	...	...	Pundi, pundrika.
" sabdariffa	...	...	...	Nelli soppu.
Marselia minuta	...	...	...	Chitigina soppu.
Mollugo diffusa	...	...	...	Kendsále "
Portulacca meridina	...	...	...	Huli bachcheli.
" crystallina	...	...	...	Dodda góú.
Sinapis alba	...	Mustard	...	Sásive soppu.
Phlomis esculenta	...	...	...	Tumbe "
Trianthema decandra	...	...	...	Gaija "
" monogyn...	...	...	...	Nuchehu góú.
Trigonella fœnum græcum	...	Fenugreek	...	Mente soppu.

The *fruits* and *seeds* of the following trees and plants are also used in curries. Fruits introduced into curries are generally unripe ; when ripe they are unfit for the purpose.

Aeschynomene grandiflora	...	...	...	Agase káyi.
Artocarpus integrifolia	...	Jack fruit	...	Halsina "
Bryonia umbellata	...	...	...	Tonde "
Capparis zeylanica	...	...	...	Totti
Cucurbita alba	...	Pumpkin	...	Dodda or búda kumbala káyi.
" lagenaria	...	...	...	Dodda sóre káyi.
Cucumis acutangulus	...	...	...	Hire káyi.
" pentandra	...	...	...	Tuppa hire.
" species	...	...	...	Huli saute.
" utillatissimus...	...	Country cucumber	...	Saute káyi.
Dolichos lablab	...	...	...	Man avare.
" " var	...	...	...	Bili manavare.
" minimus	...	...	...	Ghattavare.
" spicatus	...	Cow gram	...	Dodda manavare.
" suratu	...	...	...	Budame káyi.
Hibiscus esculentus	...	...	...	Bende káyi.
Hyperanthera morunga	...	Morunga fruit	...	Nugge "
Momordica dioica	...	...	...	Gid hágalu.
" operculata	...	...	...	Hágal káyi.
" species	...	...	...	Bále.
Musea paradisiaca	...	Plantain	...	Niru badane.
Solanum longum	...	Brinjal	...	Dodda "
" melongena	...	...	...	Molalu "
" varietas	...	...	...	Podla káyi.
" trilobatum	...	...	...	Kiripodla káyi.
Trichosanthis nervifolia	...	...	...	Kákadonde.
" cucumerina	...	...	...	Góri káyi.
" kakydonda	...	...	...	
Trigonella tetrapetala	...	...	...	

A few names may be added of plants, the *roots* of which are used in curries. Of these the country or sweet potato grows here to great perfection.

Arum manchy canda	...	Good arum	...	Churna gadde.
Arum esculentum	...	...	...	Kesavin "
Convolvulus batatos	...	Country potato	...	Gepasu "
Daucus carota	...	Carrot	...	Gajar gadde.
Dioscorea sativa	...	Yam	...	
Raphanus sativus	...	Radish	...	Maguni "

The catalogue which here follows, of plants in the Lal Bagh or Government Gardens at Bangalore, will serve to shew the capabilities of the climate and the attention bestowed on horticulture :—

<i>Ranunculaceæ.</i>		<i>Brassicaceæ.</i>	
<i>Adonis autumnalis</i> ...	Pheasant's eye.	<i>Raphanus sativus</i> ...	Radish.
<i>Clematis gouriana</i>		<i>Brassica oleracea</i> ...	Cabbage.
" species		" <i>campestris</i>	
<i>Delphinium ajacis</i> ...	Larkspur.	" <i>napus</i>	Turnip.
" <i>consolida</i>		" <i>rapa</i>	Rape.
<i>Naravelia zeylanica</i>		<i>Nasturtium officinalis</i>	Water cress.
<i>Thalictrum foliosum</i> ...	Meadow rue.		
<i>Ranunculus wallichianus</i> ...	Crowfoot.		
<i>Dilleniaceæ.</i>		<i>Capparidaceæ.</i>	
<i>Dillenia speciosa</i>		<i>Cleome purpurea</i>	
		" <i>pungens</i>	
		" <i>monophylla</i>	
		<i>Gynandropsis pentaphylla</i>	
<i>Magnoliaceæ.</i>		<i>Violaceæ.</i>	
<i>Magnolia grandiflora</i>		<i>Ionidium suffruticosum</i>	
		<i>Viola odorata</i> ...	Violet.
		" <i>tricolor</i>	Heart's-ease.
		" <i>walkerii</i>	
<i>Anonaceæ.</i>		<i>Polygalaceæ.</i>	
<i>Anona squamosa</i> ...	Custard apple. Sita phal.	<i>Polygala arvensis</i> ...	Milkwort.
" <i>glabra</i>		" <i>speciosa</i>	
" <i>muricata</i> ...	Sour sop.		
" <i>reticulata</i> ...	Bullock's heart. Kām phal.		
" <i>cherimolia</i>			
<i>Artabotrys odoratissimus</i>			
<i>Guatteria longifolia</i>			
" <i>littoralis</i>			
" <i>cerasoides</i>			
<i>Michelia champaca</i>	Champaka. Sam pige.		
" <i>var alba</i>	Bile sam pige.		
" <i>nilagirica</i>			
<i>Uvaria cerasoides</i>			
<i>Nymphaeaceæ.</i>		<i>Caryophyllaceæ.</i>	
<i>Nymphaea lotus</i> ...	Egyptian lotus.	<i>Cerastium vulgatum</i> ...	Mouse eared chick-weed.
" <i>corulea</i> ...	Water lily. Naidile.	" <i>tomentosum</i>	
" <i>pubescens</i>	Lotus. Tavare.	" <i>indicum</i>	
" <i>rubra</i>		<i>Dianthus barbatus</i> ...	Pink.
<i>Victoria regia</i> ...	Amazon lily.	" <i>chinensis</i>	Chinese pink.
		" <i>caryophyllus</i>	Carvation.
		" <i>heldewiggii</i>	Japanese pink.
		" <i>plumarius</i>	Common pink.
		" <i>sinensis</i>	
		" <i>var-plena</i>	
		" <i>deltoidea</i>	
		<i>Lychnis chalcedonica</i>	
		" <i>species</i>	
		<i>Saponaria calabrica</i>	
		<i>Silene pendula</i> ...	Catchfly.
		" <i>armeria</i>	
		" <i>quinquevulnera</i>	
		<i>Stellaria media</i>	
		<i>Viscaria oculata</i> ...	Rock Lychnis.
<i>Papaveraceæ.</i>		<i>Hypericaceæ.</i>	
<i>Argemone mexicana</i>		<i>Hypericum mysorens</i> ...	St. John's wort.
<i>Glaucium luteum</i> ...	Horn poppy.		
<i>Papaver rhæas</i> ...	French poppy.		
" <i>dubium</i> ...	Long headed poppy.		
" <i>somniferum</i>	Opium poppy. Gasagase.		
<i>Cruciferae.</i>		<i>Ternstroemiaceæ.</i>	
<i>Capella bursapastoris</i> ...	Shepherd's purse.	<i>Camellia japonica</i>	
<i>Cheiranthus cheiri</i> ...	Wall flower.	<i>Cochlospermum gossypium</i> ...	Kuteera gum tree.
" <i>annus</i> ...	Stock.	<i>Thea viridis</i> ...	Tea shrub.
" <i>lucanus</i>			
<i>Cochlearia armoracia</i> ...	Horse radish.		
<i>Erysimum perfolskianum</i> ...	Blistering cress.		
" <i>strictum</i>			
<i>Matthiola annua</i> ...	Ten week stock.		
" <i>others</i>			
<i>Lepidium sativum</i> ...	Cress.		
<i>Iberis umbellata</i> ...	Candytuft.		
" <i>odorata</i>			
" <i>amara</i>			
<i>Malcomia maritima</i>			
" <i>var-alba</i>			
		<i>Dipterocarpeæ.</i>	
		<i>Vatica lacifera</i>	
		<i>Malvaceæ.</i>	
		<i>Abelmoschus esculentus</i>	
		" <i>ficulneus</i>	
		<i>Al'utlon indicum</i>	

Abutilon striatum
Althea rosea ... Hollyhock.
 " *flexuosa*
 " *purpurea*
Gossypium herbaceum ... Cotton.
 " *barbadense*
 " *acuminatum*
 " *religiosum*
Hibiscus tricuspidatus ... Handsome trees or
 " *lindleyi* shrubs, the bark
 " *vitifolius* of several species
 " *cannabinus* can be manufac-
 " *rosa sinensis* tured into mats
 and cordage.

Hibiscus rosa rubra *plenus*
 " " *flavo plenus*
 " " *carneo plenus*
 " *grandiflorus*
 " *radiatus*
 " *mutabilis*
 " " *var-plena*
 " *liliflorus*
 " *sabdariffa* ... Red sorrel of the
 W. Indies.

" *syriacus*
 " *var plena*
 " *lampas*
 " *vesicarius*
 " *manihot*
Lavatera thuringiaca
Malope trifida ... Tree mallow.
Malva sylvestris ... Common mallow.
Pavonia odorata
Sida alnifolia ... Shrubby plants, flo-
 wers generally pale
 yellow.

" *indica*
 " *cordifolia*
 " *acuta*
 " *humilis*
 " *mysorensis*
 " *speciosa*
 " *rhomboides* ... Produces an excel-
 lent fibre.

Thespesia populnea
 " " *variegata*
Urena lobata

Sterculiaceae.

Sterculia foetida
 " *balanghas*
 " *alata*
Isora corymbifolia
Heritiera littoralis ... Looking glass plant
Dombeya palmata
Brachychiton acerifolium
Bombax malabaricum ... Silk cotton tree,
 evergreen.
 " *erianthos* ... Ornamental, flowers
 white or yellow.
 " *heptaphyllum*
Adansonia digitata ... Sour gourd, an
 evergreen tree, flo-
 wers white, very
 peculiar.

Eriodendron anfractuosum
 " (Bombax) *pentan-*
drum

Ochromala ajopus ... Deciduous at Ban-
 galore.
Helicteres isora ... Screw tree, ever-
 green shrub.

Tiliaceae.

Triumfetta angulata
Grewia asiatica
 " *oppositifolia*
Berrya ammonilla
Elaeocarpus serratus
Corchorus acutangulus

Linaceae.

Linum usitatissimum ... Flax.
 " *var-alla*
 " *grandiflorum*
 " *trigynum*

Malpighiaceae.

Aspidopteris indica
Bonisteria lauriflora
Stigmaphyllon aristatum
Hiptage madagblota
Malpighia punicitola ... Barbadoes cherry.
 " *heteranthera*
 " *coccifera*

Zygophyllaceae.

Guaiacum officinale ... Lignum-vitae tree,
 Very valuable.
Melanthus major ... Honey tree.
 " *minor*

Geraniaceae.

Pelargonium inquinans ... Stork's bill.
 " *radula*
 " *zonale*
 " *lateripes*
 " *bicolor*
 " *flavum*
Geranium erianthum ... Crane's bill.
 " *tuberosum*

Tropaeolaceae.

Tropaeolum lobbianum ... Nasturtium.
 " *cuarriense*
 " *magus*
 " *minus*
 " *tricolorum*
 " *azureum*

Rutaceae.

Ruta graveolens ... Rue.
Xanthoxylon hastile

Ochnaceae.

Ochna squarrosa

Meliaceae.

Azadirachta indica ... Neem.
Melia azedarach ... Dead tree. Deciduous,
 " *azadirachta* ... Evergreen.
Munronia neilgherria

Ampelidaceæ or Vitaceæ.

- Ampelopsis* *roylii*
Cissus *discolor*
 " *heterophylla*
Leea *aspera*
Vitis *vinifera* ... Grape vine.
 " *quadrangularis*
 " *ariculata*
 " *indica*

Sapindaceæ.

- Sapindus* *emarginatus* ... Soap berry.
 " *fruticosus*
 " *laurifolius*
Nephelium *lichii*
 " *species*
Dodonæa *viscosa*
Cardiospermum *halicacabum* Heart seed, deciduous creeper.

Anacardiaceæ.

- Semecarpus* *anacardium* ... The juice contained in the fruit of this tree is used by the natives for marking linen.
Schinus *molle* ... Maltese pepper tree.
Olma *wodier*
Mangifera *indica* ... Mango tree.
Anacardium *occidentale* ... Cashew-nut.

Leguminosæ.

- Agati* *grandiflora*
 " *coccinea*
 " *var-alba*
 " *var-rosea*
Echynomene *aspera*
 " *indica*
Adenanthra *pavonina*
Acacia *alata*
 " *arabica*
 " *diluta*
 " *farnesiana*
 " *longifolia*
 " *lophantha*
 " *lebbeck*
 " *mucronata*
 " *robusta*
 " *speciosa*
 " *stricta*
 " *suaveolens*
 " *sandra*
Abrus *precatorius* ... An evergreen climber, with racemes of pale purple or rose coloured flowers, sometimes called the wild liquorice.
Brachypterum *scandens*
 " *populneum*
Bauhinia *purpurea*
 " *var-alba*
 " *acuminata*
 " *parviflora*
 " *elata*
 " *variegata*
 " *tomentosa*
 " *diphylla*
 " *racemosa*
Arachis *hypogæa* ... Earth-nut.
Amherstia *nobilis*
Albizia *amara*
 " *julibrissin*
 " *stipulata*
Vicia *faba* ... Garden bean.
Virgilia *capensi*

- Uraria* *picta*
Trifolium *pratense* ... Clover.
 " *repens*
Tephrosia *candida*
 " *purpurea*
 " *tenuis*
 " *suberosa*
 " *incana*
 " *senticosa*
Tamarindus *indica* ... Tamarind.
 " *var*
Swainsonia *galegifoli*
Spartium *juncæum* ... Spanish broom.
Sophora *tomentosa*
Sesbania *egyptiaca*
Schotia *latifolia*
Rothia *tritoliata*
Psophocarpus *tetragonolobus*
Prosopis *spicigera*
Sutherlandia *frutescens*
Trigonella *ternum-græcum* ... Fenugreek.
Pongamia *glabra* ... A middling sized deciduous tree, foliage somewhat like the beech, flowers rose coloured.
Poinciana *pulcherrima* ... Gool-mohr, deciduous trees, the flowers of *P. regia* appear in advance of the young leaves, presenting the appearance of a golden mass of colour.
 " *var-lutea*
 " *regia*
 " *elata*
 " *gilliesii*
Pisum *sativum* ... Pea.
Phaseolus *vulgaris* ... Kidney bean.
 " *lunatus*
 " *caracalla*
 " *triobus*
 " *mungo*
 " *species*
Parkinsonia *aculeata*
Notonia *grandiflora*
Ormocarpum *sennoides*
Mucuna *prurita* ... Cow itch.
 " *atropurpurea*
Mimosa *rubricaulis* ... Bramble stalk.
 " *sensitiva* ... Sensitive plant.
 " *pubica* ... Humble plant.
Medicago *sativa* ... Lucerne.
Lupinus *hartwegii* ... Lupin, showy annuals, or herbaceous plants.
 " *mutabilis*
 " *luteus*
 " *pubescens*
 " *polyphyllus*
Lathyrus *grandiflorus*
 " *odoratus* ... Sweet pea.
 " *latifolius* ... Everlasting pea.
Kennedy *rubicunda*
 " *monophylla*
Jonesia *asoca* ... The flowers of this tree are very fragrant after sunset deciduous.
Inga *haematoxylon*
 " *houstoni*
 " *dulcis* ...
Indigofera *enneaphylla*
 " *hirsuta*
 " *pulcherrima* ... Indigo.
 " *atropurpurea*
 " *violacea*
 " *tinctoria*

<i>Hymenaea courbaril</i>	... Locust tree.		
<i>Hedysrura coronarium</i>	... French honey suckle.		
<i>Hematoxylon campechianum</i>	Logwood.		
<i>Guilandina bonducella</i>	... Nicker tree.		
<i>Flemingia congesta</i>			
" <i>strobilifera</i>			
<i>Erythrina glauca</i>	... Cora l tree.		
" <i>indica</i>			
" <i>var alba</i>			
" <i>ovalifolia</i>			
" <i>suberosa</i>			
" <i>laurifolia</i>			
" <i>cristagalli</i>			
<i>Dolichos uniflorus</i>			
" <i>glutinosus</i>			
<i>Desmodium triflorum</i>			
" <i>latifolium</i>			
" <i>polycarpum</i>			
" <i>umbellatum</i>			
<i>Desmanthus virgatus</i>			
<i>Dalbergia latifolia</i>			
" <i>sissoo</i>			
" <i>rimosa</i>			
<i>Cicer arietinum</i>	... Chick pea.		
<i>Cytisus laburnum</i>			
<i>Cylista scariosa</i>			
<i>Crotalaria juncea</i>			
" <i>retusa</i>			
" <i>bitaria</i>			
" <i>verrucosa</i>			
" <i>laburnifolia</i>			
" <i>mysorensis</i>			
" <i>incana</i>			
" <i>grahamiana</i>			
<i>Cassia tomentosa</i>			
" <i>alata</i>			
" <i>florida</i>			
" <i>auriculata</i>			
" <i>glauca</i>			
" <i>sophora</i>			
<i>Clitoria ternatea</i>			
" <i>lasciva</i>			
" <i>heterophylla</i>			
<i>Clinanthus dampieri</i>	... Sturts pea.		
" <i>punicus</i>			
<i>Cerantonia siliqua</i>	... Carob tree.		
<i>Castanospermum australe</i>	... Moreton Bay chestnut.		
<i>Cathartocarpus fistula</i>	... Related to the genus cassia.		
" <i>roxburghii</i>			
<i>Canavalia gladiata</i>			
" <i>obtusifolia</i>			
<i>Cesalpinia sappan</i>			
" <i>sepiaria</i>			
" <i>coriaria</i>			
" <i>digyna</i>			
" <i>paniculata</i>			
" <i>tortuosa</i>			
" <i>ferruginea</i>			
<i>Cajanus indicus</i>	... Pigeon pea, evergreen shrub, flowers yellow.		
" <i>bicolor</i>			
<i>Butea superba</i>	... Evergreen trees, from which the gum lac is procured.		
" <i>pubescens</i>			
		<i>Rosaceae.*</i>	
		<i>Rosa damascena</i>	... Rose Damask.
		" <i>brunoniana</i>	
		" <i>rubiginosa</i>	... Sweet briar.
		" <i>banksiae</i>	... Banksian.
		" <i>indica</i>	... Monthly rose.
		" <i>multiflora</i>	
		" <i>moschata</i>	... Musk rose.
		" <i>centifolia</i>	... Cablage rose.
		" <i>lawrenciana</i>	
		" <i>pomponia</i>	... Pomponie.
		" <i>bracteata</i>	... Macartney.
		" <i>gallica</i>	... French rose.
		" <i>parvifolia</i>	... Burgundy.
		" <i>alpina</i>	... Boursalt.
		" <i>alta</i>	... White or Belgic.
		" <i>microphylla</i>	... Small leaved.
		<i>Poterium caudatum</i>	... Burnet.
		<i>Cydonia vulgaris</i>	... Quince.
			<i>Combretaceae.</i>
		<i>Combretum densiflorum</i>	
		" <i>grandiflorum</i>	
		" <i>comosum</i>	
		" <i>purpureum</i>	
		<i>Poirrea coccinea</i>	
		" <i>purpurea</i>	
		<i>Terminalia catappa</i>	... Bengal almond.
		" <i>belerica</i>	
		" <i>paniculata</i>	
		<i>Quisqualis indica</i>	
		<i>Anogeissus acuminatus</i>	
			<i>Celastraceae.</i>
		<i>Elaeodendron orientale</i>	... Olive wood.
		<i>Celastrus emarginatus</i>	... Staff tree, shrub, flowers yellow.
			<i>Rhamnaceae.</i>
		<i>Ceanothus triquetrus</i>	
		<i>Colubrina asiatica</i>	
		<i>Rhamnus utilis</i>	... Buckthorn.
		" <i>chlorophorus</i>	
		<i>Zizyphus jujuba</i>	
		" <i>glabrata</i>	
		<i>Scutia indica</i>	
			<i>Meistomaceae.</i>
		<i>Sonerila elegans</i>	
			<i>Myrtaceae.</i>
		<i>Barringtonia speciosa</i>	
		<i>Coreya allonora</i>	
		<i>Eucalyptus rostrata</i>	... Gum tree.
		" <i>concinna</i>	
		" <i>marginata</i>	
		" <i>globulus</i>	
		" <i>perichlata</i>	
		" <i>coriacea</i>	
		" <i>virgata</i>	
		<i>Eugenia ceylonica</i>	
		<i>Jambosa vulgaris</i>	... Rose apple.
		" <i>malaccensis</i>	
		<i>Melaleuca cajuputi</i>	... Cajuput oil tree.
		<i>Myrtus communis</i>	... Myrtle.
		<i>Pimenta vulgaris</i>	... Allspice tree, evergreen.

* Of roses there are more than 120 varieties introduced into Bangalore.

Punica granatum ... Pomegranate.

" *var-alba*

" *nana*

Syzygium jambolanum

" *zeylanicum*

Paidium pyriterum ... Guava.

" *var-variegata*

" *species*

" *pomiterum*

Onagraceæ.

Clarkia pulchella

" *elegans*

Fuchsia serratifolia

" *corymbiflora*

" *fulgens*

" *var*

Gaura lindheimerii

Godetia lindleyana

" *rubicunda*

Ænothera suaveolens

Lythraceæ.

Lawsonia inermis ... Henna plant. Decl-
duous.

Lagerstromia indica

" *var-alba*

" *reginae*

" *microcarpa*

" *parviflora*

Lafensia vandelliana

Heimia salicifolia ... A handsome tree at
Bangalore.

Cuphea eminens

Ameletia indica.

Cucurbitaceæ.

Zanonia Indica

Trichosanthes anguina ... Snake gourd.

" *palmata*

Momordica charantia

" *muricata*

Lagenaria vulgaris ... Bottle gourd.

Cucurbita maxima ... Gourd.

" *citrullus* ... Water melon.

" *ovifera* ... Vegetable marrow.

" *pepo* ... Pumpkin.

Cucumis melo ... Sweet melon.

" *sativus* ... Cucumber.

" *variegata*

Bryonia scabrella

" *laciniosa*

" *palmata*

Begoniaceæ.

Begonia fuschoides

" *manicata*

" *rex*

" *dipetala*

" *nitida*

" *discolor*

" *ulmitolia*

" *tomentosa*

" *ricinifolia*

" *hydricotylifolia*

" *argentea maculata*

" *longipes*

" *veitchii*

Begonia weltoniensis

" " *species*

Crassulaceæ.

Crassula floribunda

" *tetragona*

Dryophyllum calycinum

" *pinnatum*

Echeveria secunda

Sempervivum calcareum ... House leek.

" *arboresum*

Kalanchoe crenata

" *laciniata*

" *species*

Saxifragaceæ.

Vahlia iscosa

Umbelliferaæ.

Anethum graveolens ... Dill, biennial.

" *sowa*

" *feniculum* ... Fennel, perennial.

Apium graveolens ... Celery.

" *petroselinum* ... Parsley.

Carum carui ... Caraway.

Feniculum vulgare ... Fennel.

Hydrocotyle asiatica ... Marsh pennywort.

Postinaca sativa

Coriandrum sativum ... Coriander.

Petroselinum sativum ... Parsley.

Daucus carota ... Carrot.

" *hortensis*

Araliaceæ.

Panax fruticosum

" *cochleatum*

" *species*

Hedra helix ... Ivy.

Cornaceæ.

Benthamia fragifera ... Shrub, fruit resem-
bling *arbutus*,
edible.

Cornus macrophylla ... Dogwood.

Loranthaceæ.

Loranthus loniceroides

Rubiaceæ.

Rubia cordifolia ... Madler.

Manettia glabra

Vangueria edulis

Compositæ.

Ageratum mexicanum

" *imperial-dwarf*

Argyranthemum frutescens

Artemisia indica

" *abrotanum*

Bellis perennis ... Daisy.

Bidens wallichii ... Annual weed.

Calendula arvensis ... Marigold, gay an-
nuals.

" *officinalis*

" *var plena*

Calliopsis bicolor

" *drummondii*

" *coronata*

Callistephus chinensis

Cacalia sempervirens

Cacalia cuneata
Carduus marianus ... Milk thistle.
 " *benedictus*
Carthamus tinctorius
Centa turbinata
Centaurea cyanus ... Blue bottle, annual.

Chrysanthemum indicum
 " *tricolor*
 " *coronarium*
 and many varieties
Cichorium intybus ... Chicory.
Cineraria maritima
Cotula australis
Cynara scolymus ... Artichoke.
Dahlia variabilis
Echinops echinatus ... A common weed.
Eclipta prostrata
Emilia sagittata
 " *scabra*
Fartugium grande
Gaillardia picta
Dimorphotheca pluvialis
Gazania splendens
Helenium tenuifolium
Helichrysum bracteatum ... Golden sunflower.
 " *var alba*
Helianthus tuberosus
 " *annuus*
 " *arvensis* ... Sunflower.
Humea elegans
Lactuca sativa ... Lettuce.
Pluchea indica
 " *tomentosa*
Senecio cineraria ... Groundsell.
 " *vulgaris*
Sphranthus hirtus
Tagetes erecta ... African marigold.
 " *patula* ... French "
Vernonia cinerea
Xanthium orientale
Ximenesia encelioides
Xeranthemum cylindraceum
Zinnia elegans
 " *var-plena*
 " *multiflora*

Campanulaceæ.

Campanula trachelium
 " *rapunculoides*
 " *pyramidalis*
Trachelium caruleum ... Throatwort.

Ebenaceæ.

Diospyros sapota ... Date plum, handsome evergreen tree.

Sapotaceæ.

Achras sapota ... Wild pear, evergreen tree, ornamental.
Bassia latifolia
 " *longifolia*
Minusaps elengi
Sideroxylon inerme ... Iron wood.

Oleaceæ.

Chondrospermum smilacifolium

Chondrospermum dentatum
Ligustrum sinense ... Privet.
Olea europæa ... Olive.
Neronia emarginata

Apo-cynaceæ.

Adenium obesum
Allamanda grandiflora
 " *cathartica*
 " *neritola*
 " *schottii*
 " *violacea*
Vinca rosea ... Periwinkle.
 " *var-alba*
 " *ocellata*
 " *pusilla*
Beaumontia grandiflora
 " *longifolia*
Cassia carandas
Cerbera odollum
Echites suberecta
 " *picta*
 " *punctulata*
Nerium odoratum
 " *oleander* ... Oleander.
 " *var-plena*
Plumeria alba
 " *acuminata*
Roupellia giata
Tabernaemontana coronaria
 " *parviflora*
 " *dichotoma*
Thevetia nerifolia
Vallaris dichotoma
Wrightia mollissima ... Shrubs or small trees, flowers white
 " *tinctoria* ... fragrant, W. antidy-
 " *antidysenterica* ... senterica furnishes
 the official Concessi
 bark.

Asclepiadaceæ.

Asclepias curassavica ... Swallow wort
 flowers scarlet.
Gomphocarpus fruticosus
Hemilinus indicus
Hoya carnea
 " *imperialis*
 " *tella*
 " *ovata*
 " *viridiflora*
Stapelia revoluta ... Carrion flower
 " *grandiflora*
Leptadenia reticulata ... Twining shrub,
 flowers greenish
 yellow.

Sarcocolla brevistigma
Stephanotis floribunda
Tylophora asthmatica
 " *cappadocica*
Perularia odoratissima
Boucaresia umbellata
Calotropis hamiltonii
 " *pizanta*
Cerepegia ensifolia
 " *jacquemontiana*
 " *fimbriata*
 " *juncæa*
Cerepegia mysorensis
Cryptostegia grandiflora

Bignoniaceae.

<i>Amphilophium mutisii</i>	
<i>Bignonia suberosa</i>	... Trumpet flower.
" <i>xylocarpa</i>	
" <i>venusta</i>	
" <i>rubro-venusta</i>	
" <i>gracilis</i>	
<i>Tecoma stans</i>	... Trumpet flower.
" <i>jasminoides</i>	... Shrubs or climbers,
" <i>capensis</i>	most of the species
" <i>velutina</i>	are deciduous at
" <i>grandiflora</i>	Bangalore.
" <i>rulicans</i>	
<i>Spathodea rheedi</i>	
" <i>owariensis</i>	
" <i>crispa</i>	
" <i>adenophylla</i>	
<i>Calosanthos indica</i>	
<i>Stereospermum suaveolens</i>	
" <i>chelonoides</i>	

Pedaliaceae.

<i>Hewittia bicolor</i>	
<i>Petalum murex</i>	
<i>Sesamum indicum</i>	... Annuals, an oil is
" <i>orientale</i>	extracted from
<i>Martynia fragrans</i>	the seeds of these
" <i>camoliaria</i>	plants.

Convolvulaceae.

<i>Argyreia speciosa</i>	
" <i>pomacea</i>	
" <i>cuneata</i>	... Silver weed, ever-
	green, under-
	shrub.
<i>Batatas edulis</i>	... Sweet potato.
" <i>betacea</i>	
" <i>pentaphylla</i>	... Handsome trailers.
<i>Ipomoea sinuata</i>	
" <i>sessiliflora</i>	
" <i>coccinea</i>	
" <i>chrysoides</i>	
" <i>learii</i>	
" <i>repaiaria</i>	
" <i>racemosa</i>	
" <i>dissecta</i>	
" <i>campanulata</i>	
" <i>macrorrhiza</i>	
" <i>tuberculata</i>	
" <i>æerulea</i>	
" <i>speciosa</i>	
" <i>dentata</i>	
<i>Calonyction roxburghii</i>	
<i>Convolvulus parviflorus</i>	
" <i>tricolor</i>	
" <i>var alba</i>	
<i>Jacquemontia canescens</i>	
" <i>violacea</i>	
<i>Quamoclit phœniceum</i>	
" <i>var-alba</i>	
" <i>vulgaris</i>	
<i>Rivea nervosa</i>	
" <i>tilirifolia</i>	
<i>Porina volubilis</i>	
<i>Evolvulus alsinoides</i>	... Chickweed.
<i>Pharbitis hispida</i>	
" <i>cærulea</i>	
" <i>purpurea</i>	

Boraginaceae.

<i>Anchusa italica</i>	
<i>Coldenia procumbens</i>	... Trailing plant, flo-
	wers white.
<i>Mycotis arvensis</i>	
" <i>palmistris</i>	... Forget me not.
" <i>disitiflora</i>	
<i>Trichodesma indicum</i>	... Common weed.
" <i>zeylanicum</i>	
<i>Borago officinalis</i>	... Borage.

Solanaceae.

<i>Solanum arboreum</i>	... Nightshade.
" <i>tuberosum</i>	... Potato.
" <i>nigrum</i>	
" <i>giganteum</i>	
" <i>lacinatum</i>	
" <i>mammosum</i>	
" <i>melongena</i>	... Egg plant.
" <i>capsicastrum</i>	
" <i>coriaceum</i>	
" <i>torvum</i>	
" <i>trilobatum</i>	
" <i>macranthum</i>	
" <i>jacquini</i>	
" <i>indicum</i>	
<i>Brugmansia suaveolens</i>	
" <i>arborescens</i>	
<i>Capsicum annuum</i>	... Common pepper.
" <i>frutescens</i>	... Cayenne pepper.
" <i>fastigiatum</i>	
" <i>grossum</i>	
<i>Datura stramonium</i>	
" <i>fastuosa</i>	
" <i>chlorantha</i>	
" <i>var-plena</i>	
" <i>humilis</i>	
<i>Halrothamnus elegans</i>	
<i>Lycium afrum</i>	... Box thorn.
<i>Lycopersicum esculentum</i>	... Tomato.
<i>Petunia nyctaginiflora</i>	
" <i>violacea</i>	
" <i>variabilis</i>	
<i>Nicotiana glauca</i>	... Tobacco.
" <i>glauca</i>	
" <i>other varieties</i>	
<i>Nicandra physaloides</i>	
<i>Physalis flexuosa</i>	
" <i>peruviana</i>	... Cape gooseberry.

Scrophulariaceae.

<i>Angelonia salicariifolia</i>	
" <i>grandiflora</i>	
<i>Antirrhinum majus</i>	
<i>Brunfelsia americana</i>	
<i>Collinsia bicolor</i>	
<i>Dielytra spectabilis</i>	
<i>Franseria uniflora</i>	
" <i>acuminata</i>	
" <i>eximia</i>	
<i>Linaria bipartita</i>	... Toad flax.
<i>Lophospermum scandens</i>	
<i>Maurandia barchwana</i>	
<i>Mimulus meschatus</i>	... Musk plant.
" <i>cupreus</i>	... Monkey flower.
" <i>luteus</i>	
<i>Penstemon hartwegii</i>	
" <i>campanulatus</i>	
" <i>hirsutus</i>	

Penstemon lobbianum
 " *glabrum*
Torenia asiatica
 " *cordifolia*
Ruellia juncea
 " *multiflora*
Sanchezia nobilis
 " *var-variegata*
Verbascum thapsus ... Mullein.
Veronica spicata

Lentibulaceæ.

Utricularia reticulata,
 and vars ... Demi aquatic
 plants,

Acanthaceæ.

Thunbergia grandiflora
 " *alata*
 " *harrisii*
 " *laurifolia*
 " *lutea*
 " *leucantha*
Strobilanthes lactatus
Ruellia formosa
 " *macrophylla*
Rhinacanthus communis
Peristrophe lanceolata
Meyenia hawtayneana
 " *erecta*
 " " *alba*
 " " *violacea*
Justicia coccinea
 " *ramosissima*
Graptophyllum hortense
 " *var picta*
 " *var atropur-*
 purea
 " *nitidum*
Goldfussia isophylla
 " *species*
Gendarussa vulgaris
Fittonia aryzonocera
Eranthemum pulchellum
 " *montanum*
 " *bicolor*
Dielliptera spinosa
Cyrtanthera aurantiaca
Crassandra axillaris
 " *infundibuliflora*
Barleria gibsoni
 " *hirsuta*
 " *pentandra*
 " *cristata*
 " *acuminata*
 " *annamalais*
 " *species*
Asystasia capensis
 " *ceramandeliana*
Asteracantha longifolia
Aphelandra aurantiaca
 " *cristata*
Andrographis paniculata
Adiantum vasica
Acanthus Montanus ... Bears breech; her-
 baceous; flowers
 white.

Labiataæ.

Thymus vulgaris ... Thyme.
 " *citriodorus*

Stachys lanata ... Hedge nettle.
Salvia officinalis ... Sage; fine flower-
 ing border plants.
 " *argentea*
 " *sclarea*
 " *coccinea*
 " *splendens*
 " *patens*
 " *gesneriflora*
 " *indica*

Plectranthus tuberosus

" *caneolor*
Origanum majorana ... Marjorum.
 " *vulgare*
Ocimum canum
 " *basilicum* ... Sweet basil.
 " *sanctum*
 " *thrysiferum*

Mentha piperita ... Peppermint.
 " *pulegium* ... Penny royal.
Melissa officinalis ... Balm.
Lavandula vera ... Lavender.
 " *spica*
Leonurus tataricus ... Motherwort.
Hyssopus officinalis ... Hyssop.
Coleus,

many varieties some
 being probably new
Cedrella triphylla ... Balm of Gilead.
Anisomelis malabarica
 " *ovata*

Verbenaceæ.

Volkameria kampherii
Vitex trifolia ... Chaste tree,
 " *alata*
Verbena venosa
 " *melindres* ... Vervain.
 " *urticulata*
 " *tweeliana*
Tectona grandis ... Teak tree, Decidu-
 ous.

Premna latifolia
 " *integerrima*
Petra volubilis
Lantana indica
 " *melissifolia*
 " *slovii*
 " *mixta*
 " *odorata*
 " *alba*
 " *species*
Halmiskidia sanguinea
Gmelina asiatica
Duranta ellisia
 " *plumieri*
Congea azurea
Clerodendron fragrans
 " *var-plena*
 " *siphonanthus*
 " *heterophyllum*
 " *resum*
 " *thomsonii*
Callicarpa reevesii
 " *lanata*
Aloysia citriodora ... Sweet scented ver-
 bena.
Stachytarpheta mutabilis ... Bastard vervain.
 " *jamaicensis*

Myrsinaceæ.

Ardisia crenulata
 " *polycephala*
 " *solanacea*
 " *odontophylla*
Corynocarpus laevigata
Jacquinia ruscifolia

Primulaceæ.

Primula acaulis ... Primrose.
Anagallis indica ... Indian pimpernel.
Cyclamen persicum ... Sow bread, corn
 rooted.

Plumbaginaceæ.

Plumbago capensis
 " *rosea*
 " *zeylanica*

Plantaginaceæ.

Plantago asiatica

Nyctaginaceæ.

Bougainvillea spectabilis
 " *glabra*
Mirabilis jalapa ... Marvel of Peru.
Pisonia aculeata
 " *morindifolia*
Bernaavia erecta ... Hogweed, herlace-
 " *diffusa* ... ous plants of little
 beauty.

Chenopodiaceæ.

Salicornia brachiata
Chenopodium ambrosioides ... Goose foot.
Beta vulgaris ... Beet.
Atriplex hortensis ... Orach.
 " *portulacoides*
Spinacia oleracea ... Spinach.

Amaranthaceæ.

Iresine lindenii
 " *herbstii*
 " *acuminata*
 " *speciosa*
Gomphrena globosa ... Globe amaranth.
Celosia cristata ... Cockscomb.
 " *argentea*
 " *pyramidalis*
Amaranthus caudatus ... Love lies bleeding,
 annual.
 " *hypochondriacus* ... Prince's feather, an-
 nual.
 " *oleraceus* ... Eaten by the
 Hindus.
 " *polygynus*
 " *tricolor*
 " *spinosus*
Alternanthera sessilis
 " *amabile*
 " *achyrantha*
Achyranthes aspera
Papalia orbiculata
Desmodium muricata

Polygonaceæ.

Rumex acetosa ... Sorrel.
 " *vesicarius* ... Bladder dock.

Polygonum orientale
 " *rivulare*
 " *hydropyrum* ... Buckwheat.
Cocculus cordatus
Coccoloba platyclada
Antigonon leptopus
 " *carnea*
 " *annua*
 " *purga* ... Jalap.

Urticaceæ.

Urtica scabra ... Indian nettle.
Boehmeria nivea ... Khea fibre.
Debregeasia pulcherrima

Euphorbiaceæ.

Euphorbia nerifolia ... Sponge, grotesque
 " *tirescalli* and curious plants
 " *bojeri* of a succulent
 " *antiquorum* nature.
 " *pulchra*
 " *ligularia*
 " *officinarium*
Acalypha indica
 " *tricolor*
 " *emarginata*
Aleurites triloba
Antidesma paniculata
Buxus sempervirens ... Box tree.
Cicca disticha
Croton tiglium
 " *lineare*
 " *veitchii*
 " *glabellum*
 " *maximum*
 " *variegatum*
 " *var-longistolia*
Dalechampia velutina
 " *roeziana*
Embelia officinalis ... Sandal tree.
Gelonium fasciculatum ... Cassia root.
Hura crepitans ... Physic nut.
Jasminum manihot
Jatropha pandurifolia
 " *multifida*
 " *glandulifera*
 " *curcas*
Melastoma rhomboides
Pedilanthus tithymaloides ... Slipper plant.
Phyllanthus niruri
 " *nivea*
 " *polyphyllus*
Poinsettia pulcherrima
 " *var-alba*
Ricinus communis ... Castor-oil plant.
Sapium indicum
Stillingia sebitera ... Tallow tree.

Aristolochiaceæ.

Aristolochia labiosa
 " *bracteata*
Aristolochia indica
 " *acuminata*

Amentaceæ or Amentiferaæ.

Corylus avellana ... Filbert nut.
Salix babylonica ... Willow.
 " *tertiopernua*

Santalaceæ.

Santalum album ... Sandal-wood.

Lauraceæ.

Cumphora officinarum ... Cumphire tree.

Persea gratissima ... Alligator pear.

Tetranthema monopetala

 " *ferruginea* ... Rustard cinnamon.

 " *aromaticum* ... True cinnamon.

Piperaceæ.

Chavica nigrum ... Black pepper.

Piper canescens ... Pepper.

 " *betle* ... Betel vine.

Peperomia argyrea

Conifereæ.

Pinus longifolia

 " *pseudostrobus* ... Pine or fir tree.

 " *excelsa*

 " *kashiana*

Araucaria bidwilli

 " *cookii*

 " *cunninghami*

 " *excelsa*

Dammara robusta ... New Zealand pine.

 " *australis*

Abies smithiana ... Fir tree.

Juniperus recurva ... Juniper.

 " *chinensis*

Cryptomeria japonica ... Japan cedar.

Thuja orientalis ... Arbor vite.

 " *plicata*

 " *orientalis*, var. *Wareana*

Cupressus tortulosa ... Cypress, ornamental

 " *cashmeriana* ... evergreen trees.

 " *funeris*

 " *lusitanica*

 " *lawsoniana*

 " *sempervirens*

Callitris quadrivalvis ... Thuja like.

Frencela gunnii ... Tasmanian pine.

 " *sp*

Cedrus deodara ... Cedar.

Cycadeaceæ.

Cycas revoluta

 " *circinnalis*

 " *species*

Zamia species

Palmaceæ.

Areca catechu ... Areca nut palm.

 " *oleracea* ... Cabbage palm.

 " *madagascariensis*

 " *species*

 " *alba*

 " *baueri*

 " *rubra*

Arenga saccharifera ... Sugar-bearing palm.

Borissus flateiformis ... Fan leaved palm.

Caryota urens ... Toddy palm.

 " *cuanmingi*

 " *furfusa*

Chamærops humilis ... Dwarf fan palm.

Cocos nucifera ... Coconut palm.

Corypha umbraculifera

 " *australis* ... Fan palm.

 " *elata*

Euterpe edulis

Phoenix dactylifera ... Date palm.

 " *aculis*

 " *sylvestris*

 " *reclinata*

Salal adansonii

Scarforthia elegans

Livistona mauritiana

Verschaffeltii splendida

Licuala spinosa

Pandanaceæ.

Pandanus odoratissimus

 " *furcatus*

 " *moschatus*

Typhaceæ.

Typha elephantina ... Bulrush.

Araceæ or Aroidæ.

Aglanema simplex ... Tropical caulescent herb, arum like, flowers white.

Alocasia indica

 " *jeuningsii*

 " *lowii*

 " *metallica*

 " *zebrina*

Pothos scandens

Amorphophallus bulbiferus ... Tropical herbs, tubers or bulbs.

 " *campanuletus* ... Arum like.

Caladium bicolor

 " *argyoneurum*

 " *argyrites*

 " *belleynei*

 " *chantinii*

 " *imperiale*

 " *alphonse*

 " *amabile*

 " *mirabile*

 " *Dr. Lindley*

 " *Princess of Wales*

 " *theresa*

 " *whightii*

 " *president*

 " *Princess of Teck*

 " *cannaertii*

 " *narmoratum*

 " *E. G. Henderson*

 " *pictum*

 " *Queen Victoria*

 " *tricolor*

 " *reinde*

 " *many varieties*

 " *undeterminable*

Colocasia antiquorum ... Evergreen herbs,

 " *odorata* ... arums.

 " *macrorrhiza variegata*

 " *violacea*

Difffenbachia picta

 " *spectabilis*

 " *pearcei*

Philodendron species ... A quick growing plant, scandent, probably monstrosus.

Richardia *arhioptica* ... Calli.
Anthurium *scherzerianum*
 " *speciosum*
 " *grandis*

Pistaceae.

Pistia *stratiotes* ... Water soldier, a
 pretty aquatic
 plant.

Dioscoreaceae.

Dioscorea *sativa*
 " *alata*
 " *bulbifera* ... Yam.
 " *latifolia*
 " *aculeata*
 " *globosa*

Liliaceae.

Tulipa *suaveolens* ... Tulip.
 " *silvestris*
Sansevieria *zeylanica* ... Bowstring hemp.
 " *cylindrica*
Polyanthes *tuberosa* ... Tuberosae.
 " *var-pleia*
Ornithogalum *elatum* ... Star of Bethlehem.
Lilium *bulbiferum* ... Orange lily.
 " *atr. sanguineum*
 " *var-gran. lilorum*
 " *longilorum*
 " *candidum* ... White lily.
 " *tigrinum* ... Tiger lily.
 " *auratum*
Gloriosa *superba*
 " *methonica*
Dracena *ferrea* ... Dragon tree.
 " *terminalis*
 " *regina*
 " *australis*
Asparagus *officinalis*
 " *racemosa*
 " *sarmentosus*
 " *speciosus*
Aloe *indica*
Allium *porrum* ... Leek.
 " *cepa* ... Onion.
 " *sativum* ... Bulls. used for sea-
 soning.
 " *fragrans* ... Fragrant.
 " *ascalonium* ... Shallot.
Albica *fastigiata*
 " *altissima*
Phormium *tenax* ... New Zealand flax.
 " *fol. variegata*
Agapanthus *umbellatus* ... African lily, flowers
 blue, a most desirable
 plant.
 " *allus*
 " *angustifolius*
Yucca *gloriosa* ... Adam's needle.
 " *angustifolia*

Commelynaceae.

Commelyna *crabstis*
 " *bengalensis*
Cyanotis *faeciculata*
Tradescantia *zebrina* ... Spiderwort.
 " *discolor*

Pontederaceae.

Pontederia *coriata*
 " *dilatata*

Scitamineae or Zingiberaceae.

Alpinia *calcarata*
 " *magnifica*
 " *nutas*
Zingiber *zerumbet* ... Ginger.
 " *officinale*
Costus *speciosus*
Kaempferia *ovalifolia*
Helychium *coronarium*
 " *angustifolium* ... Garland flowers.
 " *flavescens*
Curcuma *longa*
Amomum *angustifolium*

Amaryllidaceae.

Zephyranthes *candida*
Vallota *purpurea*
Nerine *sarniensis* ... Guernsey lily.
Narcissus *tazette* ... French daffodil.
Pancratium *zeylanicum*
Eucharis *grandiflora*
 " *amazonica* ... Amazon lily.
Cyrtanthus *obliquus*
Crinum *asiaticum*
 " *toxicarum*
 " *delicatum*
 " *zeylanicum*
Amaryllis *formosissima*
 " *psittacina*
 " *latifolia*
 " *speciosa*
Agave *americana*
 " *variegata*
 " *yuccaeifolia*
 " *geminitiflora*
 " *vivipara*

Iridaceae.

Antholyza *arhioptica*
Gladiolus *alatus*
 " *cardinalis* ... Corn flag, flowers
 very handsome.
 " *communis*
Iris *germanica*
 " *florentina*
Hemantus *coccineus* ... Blood flower.
 " *punicus*
Parlanthus *chinensis*
Tigridia *pavonia* ... Tiger flower.

Vallisneriaceae.

Vallisneria *alternifolia*

Cyperaceae.

Cyperus *alternifolius*, and
 many others ... Marsh or sedgy plants,
 interesting weeds.

Gramineae.

Andropogon *citratus* ... Ornamental grasses.
 " *muricatum*
 " *shenanthus* ... Lemon grass.
Briza *maxima* ... Quaking grass.

Briza minor
Coix lacryma ... Job's tears, ornament-
 al grass.
Cynodon dactylon ... Doub grass.
Dactylis glomerata ... Cocksfoot grass.
Eleusine corvina ... Grasses, ragi.
 " *indica*
Lagurus ovatus ... Hare's tail grass.
Lolium italicum
 " *perenne* ... Darnel rye grass.
Oryza sativa ... Rice.
Panicum miliaceum
 " *jumentorum* ... Panic grass.
 " *maximum* ... Grain grass.
 " *tomentosum*
 " other species
Poa nemoralis
 " *annua* ... Meadow grass.
 " *plumosa*
 " *trivialis*
 " *ciliaris*
Sorghum Saccharatum ... Chinese sugar-cane.
 " *vulgare*
Spinifex squarrosus ... Chelum.
Stenotaphrum complanatum ... Buffalo grass.
Zea mays ... Maize.
 " *variegata*
Triticum hybernum ... Wheat.
Saccharum officinarum ... Sugar-cane.
 " *spontaneum*
 " *sara*

Pomaceæ.

Eriobotrya japonica ... Loquat.
Cotoneaster affinis
 " *vulgaris*
 " *myriophylla*
Crataegus crenulata ... Hawthorn, evergreen
 shrub.
Prunus domestica ... Plum.
 " *var* ...
Pyrus communis ... Common pear.
 " *malus* ... Common apple.

Rosaceæ.

Rosa lateritia ...

Cactaceæ.

Cereus erectus
 " *trigonus*
 " *grandiflorus*
 " *crenatus*
 " *pentagonus*
Echinocactus cornigerus ... Hedgehog cactus.
Melocactus communis ... Melon thistle.
Opuntia dillenii ... Indian fig cactus
 " *spinosissima*
 " *cochinellifera*
Perskia leo ... Barbadoes goose-
 berry.
 " *aculeata*
Epiphyllum truncatum
 " *var violaceum*
 " *phyllanthoides*
 " *crenulatum*

Mesembryaceæ.

Glinus trianthemoides
*Mesembryanthemum crys-
 tallinum* ... Ice plant.

Flacourtiaceæ.

Dixa crellina ... Arnotta dye plant,
 " species deciduous.

Portulacæ.

Clandrinia Lindleyana
Portulaca quadrifida ... Purslane.
 " *chlorica*
 " *grandiflora*

Bythneriaæ.

Abroma augustum
Astrajcea walli
Kedia calycina
Guazuma tomentosa ... Fastard cedar. De-
 ciduous.
Klinhovia hospita
Pentapetes plicata
Plenospermum acerifolium
Theobroma cacao ... Chocolate nut tree.
Visenia velutina
Waltheria indica

Nelumbiaceæ.

Nelumbium speciosum ... Sacred bean.

Clusiaceæ.

Garcinia coniocarpa ... Gamboge tree.
 " *pictoria*
Calysaction longifolium ... A dye for silk is ex-
Calophyllum inophyllum tracted from the
 flowers of this tree.

Haloragaceæ.

Myriophyllum intermedium Aquatic, herbaceous.
Tiara bispinosa

Hydrangeaceæ.

Hydrangea hortensis
 " *japonica*

Passifloraceæ.

Passiflora alata
 " *naima* ... Passion flower.
 " *leschenaultii*
 " *quadrangularis* ... Granadilla.
 " *laureolia*
 " *serratifolia*
 " *cuneifolia*
 " *caerulea*
 " *kermesina*
 " *var-purpurea*
 " *foetida*
 " *midlet-niana*
 " *edulis*
 " *munucija cecellata* ... Parsnip.
Tacsonia var-volkemii ... Crimson tacsonia.

Droseraceæ.

Drosera intermedia
 " *indica*

Moringaceæ.

Moringa pterygosperma

Illecebraceæ.

Spergula pilifera ... Spurry.

Oxalidaceæ.

Oxalis corniculata ... Wood sorrel.

" *variabilis*

" *sensitiva*

" *elegans*

" *bowiana*

" *chitensis*

Averrhoa bilimbi ... Kamarick, fruit tree.

" *carambola*

Berberaceæ.

Berberis aristata ... Berberry.

" *asiatica*

Papayaceæ.

Carica papaya ... Papaw tree.

Resedaceæ.

Reseda odorata ... Mignonette.

" *luteola*

Turneraceæ.

Turnera ulmifolia

" *var-angustifolia*

Simarubaceæ.

Quassia amara

Balsaminaceæ.

Impatiens balsamina ... Touch me not.

Balsamina hortensis

" *var-plena*

" *var-rubra*

Aurantaceæ.

Triphasia trifoliata

Limonia monophylla ... Wild lime.

Ægle marmelos ... Bael of India, ever-

Glycosmis pentaphylla ... green tree, fruit somewhat resembling the orange.

Feronia elephantia ... Elephant apple.

Citrus decumana ... Shaddock.

" *aurantium* ... Orange tree.

" *bergamia* ... Bergamotte.

" *limonum* ... Lemon.

" *medica* ... Citron tree.

" *limetta* ... Lime.

" *vulgaris* ... Seville orange.

Bergera koenigii

Atlantia monophylla

Murraya exotica

" *paniculata*

Pittosporaceæ.

Pittosporum flavum

" *undulatum*

" *tobira*

" *salicinum*

Aquifoliaceæ.

Ilex cornuta ... Holly.

Hydrophyllaceæ.

Wigandia caracasana ... Biennial, a small tree at Bangalore flowers purple.

Polemoniaceæ.

Phlox paniculata ... Perennial phlox.

" *de-ussata*

" *drummondii* ... Annual.

Jasminaceæ.

Jasminum sambac ... Jasmine, shrubs or

" *var-plena* ... climbers, flowers

" *latifolium* ... very fragrant,

" *auriculatum* ... colour white or

" *ligustrifolium* ... yellow.

" *tinctoria*

" *heterophyllum*

" *revolutum*

" *officinale*

" *grandiflorum*

Nyctanthus arborescens

Ehretiaceæ.

Ehretia buxifolia

" *aspera*

Tiaridium indicum

Cordiaceæ.

Cordia myxa

" *sebestina*

" *latifolia*

Cuscutaceæ.

Cuscuta reflexa ... Parasite, curious.

Lamiaceæ.

Pogostemon patchouly

Crescentiaceæ.

Crescentia alata

Kigelia pinnata

Gesneriaceæ.

Gesneria tubiflora

" *longiora*

" *tuberosa*

" *barbata*

" *splendens*

Achimenes coccinea

" *longiora*

" *petiunculata*

Episcia bicolor

Gloxinia maculata

" *speciosa*

" *insignis*

Streptocarpus rexii

Dipsacaceæ.

Scabiosa atropurpurea

" *var-major*

Valerianaceæ.

Centranthus ruber

" *macrospilon*

Lobeliaceæ.

- Lobelia bicolor*
 " *erinus*
 " *heterophylla*
 " *exelsa*
Pratia angulata

Goodeniaceæ.

- Scaevola kœnigii*

Cinchonaceæ.

- Cinchona calisaya* ... Quinine tree.
Chiococca racemosa ... Snow berry.
Gardenia florida ... Cape jasmine, small
 " *var plena* ... evergreen shrubs
 " *citriodora* ... with white frag-
 " *Hamelia patens* ... rant flowers.
Hydrophyllax maritima
Icra cocinea
 " *parviflora*
 " *bandiaca*
 " *undulata*
 " *alta*
Mussaenda frondosa
Nauclea parvifolia
Pavetta indica
Pentas carnea
Randia dumetorum
 " *longiflora*
Rondeletia speciosa
Spermacoe hispida
Weinlandia notoniana

Caprifoliaceæ.

- Lonicera leschenaultii* ... Honeysuckle.
 " *japonica*
 " *confusa*

Artocarpaceæ.

- Artocarpus incisa* ... Bread-fruit tree.
 " *integrifolia* ... Jack-fruit tree.

Tetragoniaeæ.

- Tetragonia expansa* ... Spinach of New Zea-
Trianthema obcordata ... land.

Proteaceæ.

- Grevillea robusta*
Stenocarpus cunninghami

Bassellaceæ.

- Basella alba*
 " *cordifolia* ... Malabar night shade.
 " *nigra*
 " *rubra* ... Deciduous creeping
Boussingaultia baselloides ... plants which are
 edible.

Casuarinaceæ.

- Casuarina muricata* ... Evergreen trees,
 " *equisetifolia* ... clubwood.

Moraceæ.

- Morus indica* ... Mulberry.
 " *alba*

Morus nigra

- " *japonica*
Ficus elastica ... Indian rubber.
 " *religiosa* ... Reepul.
 " *indica* ... Banyan.
 " *glomerata*
 " *cavica* ... Edible fig.
 " *heterophylla*
 " *macrophylla* ... Moreton Bay fig.
 " *repens*

Cannabaceæ.

- Cannabis sativa* ... Hemp.

Smilacæ.

- Smilax ovalifolia*
 " *maculata*
 " *deltoides*
 " *z-ylanica*

Marantaceæ.

- Canna indica* ... Indian shot.
 " *lutea*
 " *elulis*
 " *warzewiczii*
 " *coccinea*
 " *glauca*
 " *discolor*
 " *gigantea*
 " *species*
Maranta arundinacea ... Arrow root.
 " *zebrina*
 " *lutea*
 " *macroryana*
 " *bicolor*

Musaceæ.

- Musa sapientum*
 " *superba* ... Plantain.
 " *paradisica*
 " *cavendishii*
 " *other species*
Ravenalia madagascariensis... Traveller's tree.

Hypoxidaceæ.

- Curculigo orchioidea*

Bromeliaceæ.

- Echmea discolor*
Ananassa sativus ... Pine apple.
 " *variegata*
 " *queen*
 " *montserat*
Billbergia zebrina
Tillandsia zebrina
Pitcairnia angustifolia

Heimadoraceæ.

- Anigozanthus rufus*

Orontiacæ.

- Acorus calamus-aromaticus* ... Sweet flag, useful
 for economic pur-
 poses.
Anthurium scherzerianum
 " *species*
 " *grandis*

Calla aethiopica
Dracontium polyphyllum

Pterocarpaceae.

Pterocarpus marsupium ... A large tree, flowers^s
 yellowish white, a
 dark red gum is ex-
 tracted from the
 bark.

Asteraceae.

Aster chinensis
 " *amellodes*
Siegesbeckia orientalis
Sanvitalia procumbens

Cedrelaceae.

Cedrela toona ... Bastard cedar, ever-
 green tree.
 " *australe*
Swietenia mahagoni ... Mahogany tree.
 " *chloroxylon* ... Satiwood tree.

Cyrtandaceae.

Aechynanthus radicans
 " *zeylanica.*

Erythroxylaceae.

Sethia indica ... A small stunted
Erythroxylon coca tree, flowers green.

Fumariaceae.

Fumaria parviflora ... Fumitory, annuals.
 " *vaillantii*

Spondiaceae.

Spondias mangifera
 " *acuminata.*

Terebinthaceae.

Rhus lanceolata
 " *mysorensis* ... Sumach.

Cobaeaceae.

Cobea scandens

Gyrocarpaceae.

Gyrocarpus asiaticus

Filices.

Acrostichum aureum
 " *variable*
Actinopteris radiata ... Resembling a mini-
 ature palm.
Adiantum caudatum
 " *capellis veneris* ... Maiden hair fern.
 " *aethiopicum*
 " *lunulatum*
 " *cuneatum*
 " *farleyense*
 " *hispidulum*
 " *macrophyllum*
 " *concinnum*
Alsophila latifolia ... Tree fern.
 " *excelsa*

Angiopteris evecta
Aspidium ariculatum
 " *falcatum*
Asplenium filix femina
 " *furcatum*
 " *esculentum*
 " *formosum*
 " *tenuifolium*
 " *varians*
 " *bulboferum* ... Bulbiferous fern.
 " *falcatum*

Blechnum orientale
Ceratopteris thalictroides

Cheilanthes farinosa
 " *mysorensis*
 " *tenuifolia*
 " *speciosa*

Cyathea sinuata
Davallia tenuifolia
 " *cheerophylla*
 " *elegans*

Drynaria quercifolia
Gleichenia dichotoma ...

Gymnogramma calomelanos. Golden fern.

" *var-chrysophylla.*
 " *tartarea* ... Silver fern.
 " *javanica*
 " *tutta*

Hemionitis cordata

Lastrea hirtipes

" *eriacarpa*
Lygodium scandens ... Climbing fern.

Lycopodiaceae.

Lycopodium phlegmaria
 " *umbrosum*

Marsileaceae.

Marsilea quadrifolia ... Aquatic plant.
Nephrodium molle

" *sparsum*
 " *tenericaule*
 " *propinquum*
 " *furcatum*
 " *eriacarpum*

Niphobolus adnascens

Nephrolepis exaltata

" *tuberosa*
 " *hirsutula*
 " *acuta*

Oleandra nerifolmis

Onychium auratum

Ophioglossum vulgatum

Osmunda regalis

Pellea germanicifolia ... Royal fern, sub-

aquatic.

Phymatodes irioides ... Common in Mysore.

Platynerium alcorniae

Pleoceltis nuda ... Elk's horn fern.

Pteris longifolia

" *cretica* ... Brake fern.

" *quadriaurita*

" *var-crenata*

" *var-tricolor*

" *var-argyræa*

" *var-rubronerva*

Polybotrya auriculata

Polypodium *trifidum*
 " *ornatum*
 " *lineare*
 " *serpens*
 " *var-bicolor*
 " *irioides*
 " *lanceolatum*
 " *lycopodioides*
Polystichum *conifolium*
Sagenia *hippocrepis*
Selaginella *apus*
 " *denticulata*
 " *kraussiana*
 " *martensii*
 " *atroviridis*
 " *laevigata*

Orchidaceæ.

Ærides *odoratum*
 " *lindleyana*
 " *specios*
Bletia *hyacinthina*
Bolbophyllum *uniflorum*
Calanthe *vestita*
Calogyne *media*
 " *odoratissima*
 " *parishi*
 " *schillerianum*
Cymbidium *ensitichium*
 " *triste*
 " *erectum*
Cypripedium *venustum* ... Lady's slipper.
Dendrobium *hierardi*
 " *formosum*
 " *farmerii*
 " *aggregatum*
 " *parishi*

Dendrobium *revolutum*
 " *devonianum*
 " *crystallinum*
 " *dulhouseianum*
 " *calceolus*
 " *palchare*
 " *chryseotzum*
 " *boxilli*
 " *schallierium*
 " *crassinode*
 " *chrysanthum*
 " *album*
 " *aureum*
 " *thysanolum*
 " *cretaceum*

Eria *densiflora*
 " *obesa*
 " *speciosa*
Geodorum *dilatatum*
Limnorchis *rosea*
Phajus *granatfolius*
 " *speciosa*
Phalenopsis *speciosa*
Pholidota *imbriata*
Saccilabium *bloomei*
 " *cuneolium*
 " *angulaceum*
 " *rubrum*
 " *paniculatum*
 " *gigantum*
Vanda *bensoni*
 " *odorata*
 " *tricolor*
 " *roxburghii*
 " *longicha*
Vanilla *aromatica*

Of grasses indigenous to Mysore, the following is a descriptive list of those fit for stacking* :—

Garike.—A kind of *hariáli*, grows to about 3 feet, a good nourishing grass, grows almost anywhere, but is best in light soil and with moderate moisture.

Ganjala Garike.—A kind of *hariáli*, very valuable for all purposes, and said to increase the milk-giving powers of cows; makes very good hay. Grows in light soil with moderate moisture.

Hanchi.—A coarse common grass, grows in any sort of place, it runs much to stalk, and is not very flourishing because of the hardness of the stalk; there are two kinds, one coarser than the other.

Kardá.—(Spear grass.) Good when young, but dries up into sticks in the hot weather; very common all over the country.

Darble.—A rushy kind of grass, grows in swamps and jheels, has a feathery flower, and its seeds fly. It grows to about 4 feet in height. Cattle only eat it when young; it makes indifferent hay.

* From a memorandum by Colonel Loddum.

Phára or Máni.—A very valuable grass, good for every kind of cattle, grows anywhere, but best on black cotton soil; attains the height of about one foot, and throws up a long flowering stalk.

Uppála.—A rushy kind of grass in jheels and swamps, height about 4 feet, nourishing and liked by cattle. Makes indifferent hay.

Sunti.—Grows in jheels, paddy fields and swamps, very good grass, makes good hay, reaches about 3 feet in height.

Nole.—A long rushy grass, grows only in damp jungles, acts as a purge on cattle, good for hide-bound beasts.

Solali.—Found in jheels, and grows to about 3 feet, makes indifferent hay. When young it is liked by, and good for, cattle, but its chief value is from the small grasses which are always found growing round the bottom of its stem.

Marahullu.—A good grass, grows to about 3 feet, is of a nourishing nature, requires a good deal of moisture.

The following are not good for stacking; they grow mixed together, *gondyada or chenlágam*, *bhimara*, *biluru-yela*, *yemamatti*, *bili-hullu*, *timmathakam*, *naribála*, *akiki-hullu*, *hiré*.

There are also certain plants or herbs which are of great use to cattle; the best of these is called *purtanipuli*, which has seeds like burrs, with a thick jointed sappy stem; grows along the ground, is very good for milch cattle.

Crops and Cultivation.*

Cultivated lands are usually classed as dry, *kushiki*; wet, *tari*; and garden, *tóta* or *bágáyat*. In the first are raised crops which do not require irrigation, *pair-áramba*: the wet crops are those dependent for their growth entirely on irrigation, *nir-áramba*: the products of garden cultivation are fruits or drugs requiring a moist situation with an abundant supply of water. Gardens are of four kinds: *tarkári tóta*, vegetable gardens; *tengina* or *adike tóta*, cocoa nut or areca nut plantations; *yela tóta*, betel leaf plantations; and *húvini tóta*, flower gardens. The agricultural seasons are two, and the produce is called *Kártika fasal* or *Vaisákha fasal* according to the time of ripening† In Ashtagram the seasons are named *kóru* and *haimu*. In parts of the Malnad the former has the name *kófu*.

The following is a list of the most generally cultivated productions of the soil:—

* Buchanan's full and accurate accounts have been freely used in describing the modes of cultivation.

† *Kártika* falls in Oct.—Nov.: *Vaisákha* in Apr.—May.

Dry Crops.*Cereals.*

<i>Cynosurus corocanus</i>	... Rági	... Rági.
<i>Holcus sorghum</i>	... Great millet	... Jola.
<i>Holcus spicatus</i>	... Spiked millet	... Sajje.
<i>Panicum frumentaceum</i>	... Little millet	... Sáme or sáve.
<i>Panicum italicum</i>	... Italian millet	... Navane.
<i>Panicum miliaceum</i>	...	... Baragu.
<i>Panicum semiverticillatum</i>	...	... Háraka.

Pulses.

<i>Cajanus indicus</i>	... Pigeon pea, doll	... Togari or tovari.
<i>Cicer arietinum</i>	... Bengal gram	... Kadale.
<i>Dolichos catianz</i>	...	... Alsandi or tadugani.
<i>Dolichos lablab</i>	... Cow gram	... Avare.
<i>Dolichos unilorus</i>	... Horse gram	... Hurali.
<i>Phaseolus minimus</i>	... Black gram	... Udu.
<i>Phaseolus mungo</i>	... Green gram	... Hesaru.
...	...	... Chennungi.
...	... Panic seed	... Korasani.

Oil seeds.

<i>Guizotea oleifera</i>	... Foolish oil plant	... Huchejju or rámtil.
<i>Ricinus communis</i>	... Castor oil	... Haraju.
...	... Wild	... Kád haraju, dod haraju, or mara haraju.
<i>Sesamum orientale</i>	... Gingelli (jinjali)	... Wolljju or achcejju.

Miscellaneous.

<i>Crotalaria juncea</i>	... Country hemp	... Sanabu.
<i>Gossypium indicum</i>	... Cotton	... Arale.
<i>Hibiscus cannabinus</i>	... Dekhan hemp	... Pundi.
<i>Nicotiana tabacum</i>	... Tobacco	... Hoce soqpu.
<i>Sinapis dichotoma</i>	... Mustard	... Sásive.

Wet Crops.

<i>Oryza sativa</i>	... Rice	... Bhatta or nellu.
<i>Saccharum officinale</i>	... Sugar cane	... Kabbu.

Garden Crops.

<i>Allium cepa</i>	... Onion	... Nirullji.
<i>Allium sativum</i>	... Garlic	... Belhullji.
<i>Ammonum zinziber</i>	... Ginger	... Sunti.
<i>Arachis hypogea</i>	... Ground nut	... Kullekáyí or neta kajale.
<i>Capsicum annuum</i>	... Chilly	... Mensina káyí.
<i>Carthamus tinctorius</i>	... Safflower	... Kusumba.
<i>Coriandrum sativum</i>	... Coriander	... Kottanbari.
<i>Cuminum cyminum</i>	... Cummin seed	... Jirige.
<i>Curcuma longa</i>	... Turmeric	... Arisina.
<i>Sison amomum</i>	... Bishop's weed	... Onra.
<i>Trigonella tanum gracum</i>	... Fenugreek	... Mentya.

Miscellaneous.

<i>Ammonum repens</i>	... Cardamom	... Yólakki.
<i>Areca catechu</i>	... Areca nut	... Adike.
<i>Cocos nucifera</i>	... Coara nut	... Tengina káyí.
<i>Coffea arabica</i>	... Coffee	... Búndu or káphi.
<i>Morus</i>	... Mulberry	... Uppu nerle or kamlañi gida.
<i>Musa sapientum</i>	... Plantain	... Bále.
<i>Papaver somniferum</i>	... Poppy	... Gasagase.
<i>Piper betel</i>	... Betel vine	... Viled-ele.
<i>Piper nigrum</i>	... Black pepper	... Menasu.
<i>Triticum aristatum</i>	... Wheat	... Gódhí.

The following table shews the relative proportions of the area under each kind of cultivation during five years past. It will be seen that nine-tenths of the cultivated land is devoted to the growth of ragi with the other dry food crops, and rice; and that any decrease in the area under the wet crop is compensated by a corresponding increase in that sown with the dry crops. But, whatever may be the cause of it, an extension of the latter and of oil seeds, cocoa nut and areca nut cultivation has evidently taken place of late at the expense of rice. From the returns it appears that a considerable transfer of land from wet to dry cultivation has occurred in the Shimoga District.

Crops.	Per centage of area under cultivation.				
	1870—71	1871—72	1872—73	1873—74	1874—75.
Ragi and other dry grains ...	66·07	66·04	70·4	77·7	77·60
Rice	2·5	24·5	18·3	9·	10·
Oil seeds	2·63	2·1	3·4	4·2	3·81
Cocoa nut and areca nut ...	·90	1·	1·6	1·9	3·12
Coffee	2·14	2·3	2·1	2·9	2·12
Vegetables... ..	1·1	1·9	·1	1·8	1·04
Cotton	·75	·78	1·4	·85	·70
Sugar-cane	·48	·45	1·	·36	·46
Tobacco	·49	·4	·4	·45	·43
Wheat	·13	·25	·2	·3	·31
Mulberry	·31	·28	·2	·25	·22
Pepper					·12
Fibres					·07

The following figures, taken from the returns for 1874—75, are instructive as shewing the districts in which the cultivation of particular products is most extensive. Shimoga is the chief rice district, and with Chitaldroog the principal country for dry grains. Wheat and vegetables are most extensively grown in Mysore. Oil seeds cover most ground in Chitaldroog, which is also pre-eminently the cotton district. Sugar cane abounds in Kolar and Hassan. The coffee and tobacco districts are in Kadur and Hassan. Chitaldroog has the greatest extent of cocoa nut and areca nut plantations, followed at a considerable distance by Shimoga. Pepper is confined to the latter. Bangalore and Mysore grow the mulberry most, for the nourishment of silkworms.

District.	Number of acres cultivated with—																	
	Rice.	Wheat.	Legit. and other food grains.	Oil seeds.	Sugarcane.	Cott. n.	Opium.	Indigo.	Fibres.	Tobacco.	Tea.	Coffee.	Vegetables.	Cocoa nut and areca nut.	Mulberry.	Jac.	Pepper.	Total.
Bangalore ...	44,037	71	453,558	28,581	1,358	...	118	...	20	902	...	...	4,937	8,215	3,338	171	...	533,143
Kolar ...	54,412	182	376,333	17,600	9,614	55	198	...	114	800	...	99	4,104	791	983	...	...	453,523
Tumkūr ...	49,803	482	551,404	13,217	384	824	...	...	...	2,642	...	...	7,965	18,922	1,068	200	...	650,346
Mysore ...	59,891	6,475	570,700	39,710	239	1,072	...	...	...	2,401	...	...	19,356	...	3,455	...	...	703,925
Hassan ...	64,783	38	284,017	21,177	6,573	41	...	...	357	7,953	...	52,906	13,969	...	42	...	...	453,207
Shimoga ...	161,000	6	917,000	6,300	3,700	1,600	...	...	1,560	155	...	3,536	3,000	33,200	...	...	6,633	1,130,814
Kadur ...	43,455	2,600	72,130	3,100	475	300	5	3	900	7,000	2	54,628	15	8,820	...	...	...	183,433
Chitaldroog	44,561	4,904	824,533	68,611	1,732	32,813	...	...	585	799	...	...	754	93,386	...	...	...	1,072,788
Total.....	521,967	15,723	1,054,181	199,286	24,415	93,705	311	3	2,536	22,652	2	111,139	54,100	163,354	11,966	371	6,933	5,226,364

Ragi—is by far the most important of any crop raised on dry fields and supplies all the lower ranks with their common diet. It is reckoned the most wholesome and invigorating food for labouring people.* Three kinds are distinguished of it, which, however, are only varieties; the *kari* or black, *kemmu* or red, and *huluparia*. All are equally productive, but the third when nearly ripe is very apt to shake the seed. In some places all three are sown intermixed in the same field, but in others more attention is paid to the quality of the grain. The black is considered in some parts to be simply grain that has got wet when it is threshing.

* The following estimate by Dr. Forbes Watson of the food-value of ragi and other Indian grains is taken from Mr. Elliot's book "*Experiences of a Planter*."

"The position of ragi as food, when compared with some of the other Indian cereals, appears from the following table:—

Name of the grain.	Wheat.	Ra'ree (<i>Pennisetia sativa</i> .)	Jowarree (<i>Sorghum vulgare</i> .)	Rice (<i>Oryza sativa</i> .)	Ragi (<i>Elousine coracana</i> .)
Number of analysed samples.	9	3	2	9	7
Moisture ...	Per cent. 12.50	Per cent. 12.00	Per cent. 12.00	Per cent. 12.00	Per cent. 12.00
<i>Nitrogenous matter.</i>					
Gluten, albumen, &c. ...	13.42	10.27	9.38	7.40	6.53
Cellulose or woody fibre ...	2.69	1.49	2.23	5.59	3.36
<i>Carbonous matter.</i>					
Starch, gum, &c. ...	68.81	71.01	72.68	78.97	74.44
Fat or oil ...	1.15	3.17	2.04	.57	1.17
Oxide of iron ...	.019	.026	.018	.008	.064
Potassa ...	.214	.405	.207	.056	.534
Soda ...	.392	.132	.135	.382	.019
Lime ...	.068	.064	.094	.026	.617
Magnesia ...	.241	.239	.200	.163	.163
Chlorine ...	.059	.058	.016	.016	.048
Phosphoric acid ...	.817	.878	.856	.287	.595
Sulphuric acid ...	.154	.105	.108	.080	.110
Silica ...	.029	.375	.088	.092	.334

"The order according to which these cereals are arranged is determined by the amount of nitrogenous matter they contain.

"Wheat stands pre-eminent, followed by ra'ree and jowarree, whilst rice and ragi occupy the lowest position. It will be observed that, in order to avoid the perturbations in the natural order which may arise from a varying amount of moisture in the grains, all the analyses have been reduced to a common moisture of twelve per cent, which is that to which all grains more or less approach. The numbers inserted in the table are, therefore, true comparative numbers.

"The ragi grown at different places seem to shew almost a greater latitude in composition than most of the other grains. Among the seven samples analysed the amount of nitrogenous matter varies between 5.49 and 9.24 per cent, so that, although the average is inferior to the rice, there are samples which may be richer in nitrogen than most of the rices.

"Still, this is only one aspect of the question. The amount of nitrogen is too often looked upon as the only exponent of the nutritive value. This is a very circumscribed view of the extremely complicated and many-sided problem of nutrition. Each of the normal components of the human body can become of paramount importance under certain conditions. The oxide of iron in the ash of the grains amounts only to some tenths of a per cent; but still the regular supply even of this small quantity is

The principal varieties in the Nandidroog Division are the *gidḍa rāgi* and *doḍḍa rāgi*. The former ripens in four months, and the latter in four and a half; and the latter is esteemed both the best in quality, and the most productive; but when the rains set in late, as it requires less time to ripen, the *gidḍa* is preferable. The best soil for *rāgi* is red, next black, then ash-coloured, and the worst is *marāḷu* or that which contains much sand.

In the Ashtagram Division the *gidḍa rāgi* is called *kār rāgi* and somewhat different. There are three kinds of *kār rāgi*: the *balaga*, or straight-spiked *rāgi*, which is always sown separately from the others; the *bili modgala*, or white *rāgi* with incurved spikes; and the *kari modgala*, or incurved black *rāgi*: the two latter are sometimes kept separate, and sometimes sown intermixed. The cultivation for all the three is quite the same and the value of the different kinds is equal; but the produce of the *kari modgala* is rather the greatest.

‘The whole world’ says Wilks ‘does not, perhaps, exhibit a cleaner system of husbandry than that of the cultivation of *rāgi* in the home fields of Mysore. On the first shower of rain after harvest the home fields are again turned up with the plough, and this operation, as showers occur, is repeated six successive times during the dry season, at once destroying the weeds and opening the ground to the influence of the sun, the decomposition of water and air, and the formation of new

essential for the proper performance of the vital functions, as it is indispensable in the formation of the blood-corpuscles.

“A dearth of iron would, therefore, be just as fatal as a want of the nitrogenous, or carbonous, or other principal constituent of food. In judging, therefore, of the relative value of an article of food, the amounts of nitrogen and carbon cannot be relied on as the sole guide. The mineral constituents must be taken into account. At the time when I published my first analyses of *rāgi*, these extended only to the organic compounds of the grain, and the position which I then assigned to it—guided only by the percentage of nitrogen—has been borne out by the subsequent analyses. Since then, however, a detailed examination of the ash has been made, which yielded some remarkable conclusions. The *rāgi* seems to be uncommonly rich in certain important mineral constituents. The amount of phosphoric acid in *rāgi* is only lower by one-fourth than that in wheat, and it is more than twice as high as in rice.

‘It contains eight times as much iron, and eight times as much potassa as rice, and, indeed, more of potassa than any of the other grains. It is, likewise, exceptionally rich in lime. The ash, composed as it chiefly is, of the most important elements, amounts on the average to 2½ per cent in *rāgi*, as compared with 0.760 per cent contained in rice.

“It is therefore possible, if not indeed probable, that the large amount and favourable composition of the *rāgi* ash may more than counterbalance its inferiority in nitrogen, so that although, according to the nutritive standard hitherto in use, it must be put below rice, *rāgi* may still be, on the whole a food satisfying by itself more completely the numerous exigencies of an article of human diet than rice.”

compounds. The manure of the village, which is carefully and skilfully prepared, is then spread out on the land, and incorporated with it by a seventh ploughing, and a harrowing with an instrument nearly resembling a large rake, drawn by oxen and guided by a boy : when the field is completely pulverized, a drill plough, of admirable and simple contrivance, performs the operation of sowing twelve rows at once by means of twelve hollow bamboos at the lower end, piercing a transverse beam at equal intervals and united at the top in a wooden bowl, which receives the seed and feeds the twelve drills: a pole at right angles with this beam (introduced between two oxen) is connected with the yoke; the bamboos project below about three inches beyond the transverse beam, being jointed at their insertion for the purpose of giving a true direction to the projecting parts, which being cut diagonally at the end, serve, when the machine is put in motion, at once to make the little furrow and introduce the seed : a flat board, placed edgewise and annexed to the machine, closes the process; levelling the furrows and covering the seed. If the crop threatens to be too early or too luxuriant, it is fed down with sheep. Two operations of a weeding plough of very simple construction, at proper intervals of time, loosens the earth about the roots and destroys the weeds; and afterwards during the growth of the crop, at least three hand weedings are applied. This laborious process rewards the husbandman in good seasons with a crop of eighty fold from the best land. The period between seed-time and harvest is five months. There is another kind of *ragi* which requires but three months. It is sown at a different season in worse ground, and requires different treatment.'

In some parts, as near Seringapatam, the ground having been prepared in the same way, the *ragi* is sown broad-cast, and covered by the plough. The field is then smoothed with the *halive*, which is a harrow or rather a large rake drawn by two bullocks. Then, if sheep are to be had, a flock of them is repeatedly driven over the field, which is supposed to enable it to retain the moisture; and for this purpose bullocks are used when sheep cannot be procured. Next day single furrows are drawn throughout the field at the relative distance of six feet. In these is dropt the seed of either *avare* or *tovari*, which are never cultivated by themselves; nor is *ragi* ever cultivated without being mixed with drills of these leguminous plants. The seed of the *avare* or *tovare* is covered by the foot of the person who drops it into the furrow. According to

the quantity of rain, the ragi ripens in from three to four months. The avare and toware do not ripen till the seventh month. The reason of sowing these plants along with the ragi seems to be that the rains frequently fail, and then the ragi dies altogether, or at least the crop is very scanty ; but in that case the leguminous plants resist the drought and are ripened by the dews, which are strong in autumn. When the rági succeeds, the leguminous plants are oppressed by it and produce only a small return ; but when the rági fails, they spread wonderfully and give a very considerable return.

In other places, as in Kolar, where the seed is sown by the drill plough, *kurige* ; behind the kurige is tied the implement called *sudike*, into which is put the seed of the avare or toware ; by this method, for every twelve drills of ragi there is one drill of pulse. After the field has been sown, it is harrowed with the bullock-rake called *halive*, and then smoothed with a bunch of thorns, which is drawn by a bullock and pressed down by a large stone. Here sheep are only used to trample the ragi fields when there is a scarcity of rain. The bullock-hoe called *kente* is used on the 15th and 18th days after sowing. On the 26th day the harrowing is repeated. On the 32nd the field is cleared from weeds with the implement called *oravari*. In four months the ragi ripens and in five the pulses.

In the west, about Periyapatna, in very rich soils, nothing is put in drills along with ragi ; but immediately after that grain has been cut a second crop of *kadale* is sown, which does not injure the ground. Sometimes a second crop of *sáme* or of *huchchellu* is taken ; but these exhaust the soil much. When rain does not come at the proper season, the ragi fields are sown with *hurañi*, *kadale*, *huchchellu*, or *kari-sáme*. The two leguminous plants do not injure the soil ; but the huchchellu and same render the succeeding crop of ragi very poor.

Rági is reaped by the sickle, and the straw is cut within four inches of the ground. For three days the handfuls are left on the field ; and then, without being bound up in sheaves, are stacked, and the whole is well thatched. At any convenient time within three months it is opened, dried two days in the sun, and then trodden out by oxen. The seed, having been thoroughly dried in the sun, is preserved in straw *múde*. The remainder is put into pits, or *lugaru* ; where, if care has been taken to dig the pit in a dry soil, it will keep in perfect preservation for ten years.

Rági is always ground into flour, as wanted, by means of a hand-mill called *bisa-gallu*. In this operation it loses nothing by measure. The flour is dressed in various ways. The most common are, a kind of pudding called *hiṭṭu*, and two kinds of cakes called *roṭṭi* and *dóshe*, both of which are fried in oil. For all kinds of cattle, the rági straw is reckoned superior to that of rice.

Tóta or *nát rági* is not the same with that cultivated on dry grounds, although in the sense adopted by botanists it is not specifically different; but the seed which is raised on dry fields will not thrive in gardens; nor will that which is raised in gardens thrive without irrigation. Garden ragi is always transplanted, and hence it is called *náṭi*. The following is the process followed in the Kolar District. For the seedling bed, dig the ground in Pushya (Dec.—Jan.) and give it a little dung. Divide it into squares, and let it have some more manure. Then sow the seed very thick; cover it with dung, and give it water, which must be repeated once in three days. The ground into which it is to be transplanted, is in Pushya ploughed five times and must be dunged and divided into squares with proper channels, like a poppy garden. About the beginning of Mágha, or end of January, water the seedlings well, and pull them up by the roots: tie them in bundles, and put them in water. Then reduce to mud the ground into which they are to be transplanted, and place the young ragi in it, with four inches distance between each plant. Next day water, and every third day for a month this must be repeated. Then weed with a small hoe, and water once in four days. It ripens in three months from the time when the seed was sown; and in a middling crop produces twenty fold. It is only sown on the ground at times when no other crop could be procured, as the expense of cultivation nearly equals the value of the crop. Another kind of *nát rági* cultivated in Sira is called *tripati*: it also has the name *sasi*.

Avare.—When ripe, the legumes are nearly dry. The plant having been cut and for one day exposed to the sun, is beaten with a stick to separate the seed. That which is designed for seed is preserved in *múḍes*; while that for consumption is kept in pots, and is used in curries. The straw is eaten by all kinds of cattle except horses.

Togari— is cut when almost dry, then put up in heaps, and on the day after, it is opened to dry in the sun. The grain is beaten out

with a stick ; and that intended for sowing must be preserved in a straw *múde*. It is used in curry. After the seed has been threshed, cattle eat the husks of the legume. The straw is used for fuel.

The best soil for the cultivation of these three articles is the black soil, or *ere bhúmi* ; which yields a crop of *rági* every year, and even without manure will give a considerable return ; but when it can be procured, dung is always given. After a crop of *jóla*, *rági* does not thrive ; but *jóla* succeeds after a crop of *rági*. The next best soil for *rági*, and the one most commonly used, is the *kelbe* or red soil. In this also it is frequently cultivated without dung ; but it requires to be manured at least once in two or three years. In *maráhu* and *dare* soils, it every year requires dung.

Jola—next to *rági* is the most considerable dry crop. In the south it is often sown for fodder ; for, when the crop is not uncommonly good, the grain is no object. It is cut and given to the cattle at a time when *rági* straw is not to be procured. Previously to being given to cattle, however, it must be dried, as the green straw is found to be very pernicious. There are two kinds of *jóla* ; the white (*bili*) and red (*kempu*). When they are intended to be cut for the grain, these are sown separately ; as the red kind ripens in three months, while four are required to ripen the white *jola*. A red *rági* soil is preferred for it, and crops of *rági* and *jola* are generally taken alternately, the crop of *rági* having an extraordinary allowance of dung. The *jola* requires less rain than the *rági*, and admits of a second crop of *hurali* being taken after it ; and thus, in the course of two years, there are on the same ground three crops.

The *jóla* is both made into flour for puddings and cakes, and is boiled whole to eat with curry, like rice. It is a good grain ; but at the utmost does not keep above two years.

The *jola* that is cultivated on dry field in the north is of three kinds ; *agara*, *kempu* and *hasaru*. They are all, probably, mere varieties. The best soil for them is a black clay ; and the next, the same mixed with sand. For *rági* these soils are of a poor quality ; but on the same dry field *jola* and *rági* may be alternately cultivated without injuring either. In *Vaisákha* or the second month after the vernal equinox, plough four times. After the next rain sow the seed. It is sown either broad-cast or by dropping it in the furrow after the plough. Smooth the field by drawing a plank over it. It requires neither weeding nor

manure. For fodder its straw is inferior to that of ragi, but superior to that of rice. *Agara jola* ripens in $4\frac{1}{2}$ months, *kempu* in 4 months. Their produce is rather less in the order they are mentioned.

Save.—There are three kinds of *sáve* cultivated in the east: *hari*, *kari*, and *hál* or *bili*. They are never intermixed, and the cultivation of the first kind differs from that of the other two. For *hari sáve* plough three times in the same manner as for ragi. If there be any to spare, give the field dung, sow broad-cast, and harrow with the bullock-rake. In three months the grain ripens without farther trouble; when it is cut down, stacked on the field for six days, and then trodden out. It keeps best in the store-house, and is never made into flour. Cattle eat the straw without injury, but it is inferior to the straw of either ragi or rice. For the other two kinds, plough three times in the course of *Ashádha* (June—July); then, after the first good rain, sow broad-cast, plough in the seed, and harrow. They do not necessarily require dung; but if any can be spared, they will grow the better for it. When ripe, which happens also in three months, they are managed as the other kind is. The seed and produce of all are nearly the same.

In Madgiri the best soil for *sáme* is considered to be the red or ash-coloured, containing a good deal of sand, which is common on high places. Without much manure, this ground does not bear constant cropping. After resting a year or more, it is first cultivated for *hurali* and next season for *sáme*. If manure can be procured, a crop of ragi is taken, and then it has another fallow. Dung being a scarce article, in place of the ragi a second crop of *sáme* is taken; but it is a bad one. If the fallow has been long, and high bushes have grown up, after burning these, the crop of *hurali* will be great, and two or three good crops of *sáme* will follow. When good ragi soil has for a year or more been waste, and is to be brought again into cultivation, the first crop ought to be *sáme*; for ragi thrives very ill on land that is not constantly cultivated. In this case, the *sáme* gives a great quantity of straw, but little grain. When the rains have failed, so that the ragi has not been sown, or when, in consequence of drought, it has died, should the end of the season be favourable, a crop of *sáme* is taken from the fields that are usually cultivated with ragi. This crop also runs to straw, and the following crop of ragi requires more dung than usual. In the course of thirty days, any time between

the middle of April and middle of July, plough three or four times. Then after a good rain, or one which makes the water run on the surface of the ground, harrow with the rake drawn by oxen, and sow the same seed with the drill, putting in with the *sulike* rows of the pulses called *hurali* or *togari*. In four months, without farther trouble, it ripens. The seed for a kolaga of land is 24 seers of the same and 6 seers of the pulse. In a good crop, the same will produce 10 kolagas of same, and two of togari, or one of hurali. That is to say one acre is sown with 2.22 pecks of same and .69 of togari; and produces 22.2 bushels of the former and 5.5 of the latter. The same straw is but bad fodder.

The same in Sira is of three kinds; *bili*, *kari* and *maliga* or *mujica*. The cultivation for the three kinds is the same, but the seeds are always kept separate. The soil that agrees with them is the *maralu*, and *dure*, or poor sandy and stony lands. This soil, if it were dunged, would every year produce a crop of same; but, as that can seldom be spared, the same is always succeeded by a crop of hurali, which restores the ground; and alternate crops of these grains may be continued, without any fallow, or without injury to the soil. In the first four months of the year, commencing about the vernal equinox, at any convenient opportunity plough four times. Then, after a good rain harrow with the rake drawn by oxen, and sow with the drill; putting the seed of the same into the *kurige*; and that of the pulses called *avare*, *togari*, *hesaru*, *hurali*, or *alsandi*, into the *sulike*. The first two are reckoned the best. Then harrow with the rake drawn by oxen. For every 48 seers of same they sow 12 seers of some one of the pulses. The produce in a good crop will be twenty seeds of the same. Of the others no account is kept; for the legumes, as they ripen, are gathered for family use. *Bili* same ripens in 3½ and *kari* in 4 months; the *maliga* requires only 3 months, and is therefore preferred when the rains begin late; but it gives little straw, and therefore in favourable seasons the others are more eligible. Same straw is here reckoned better fodder than that of rice; and, when mixed with the husks of hurali or togari, is preferred even to that of ragi. Except in case of necessity, jola straw is never used.

Sáve in Ashtagram is never sown on the *ere* or black clay, and rarely on the *kebbe*, or red soil; the two worst qualities of land being considered as sufficiently good for such a crop. In the spring the field

is ploughed five times. At the commencement of the heavy rains it is sown broad-cast, and the seed is covered by a ploughing. Even in the worst soil, there is no absolute necessity for dung ; but when any can be spared, the crop will doubtless be benefited by manure. It ripens without further care in three months, is cut close to the ground, and gathered into stacks. Five or six days afterwards it is spread on a threshing-floor, and the grain is trampled out by oxen. That intended for sowing is dried in the sun, and tied up in straw *múdes*. The remainder is preserved in *kanajas*. It is sometimes boiled whole, like rice ; at others, ground into flour for cakes. All kinds of cattle eat the straw, which is also esteemed the best for stuffing pack-saddles.

Navane.—There are two varieties cultivated in Ashtagram ; the one called *giḍḍu*, or short ; and the other *jólu*, or long, and *dodḍa* or great. Unless a quantity of dung can be spared, it is never sown on the two worst soils. On the two best soils it requires no manure, and does not injure the succeeding crop of ragi. In the spring, plough six times. When the heavy rains commence, sow, and plough in the seed. It requires neither weeding nor hoeing, and ripens in three months. Cut it close to the ground, and stack it for eight days ; then spread it to the sun for a day, and on the next tread out the grain with oxen. The seed for sowing must be well dried in the sun, and preserved in a *múde*. The remainder is kept in the *kanaja*. It is made into flour for *hiṭṭu* or pudding, and is also frequently boiled whole, like rice. The straw is used for fodder, but is not good. The *jólu navane* is sometimes put in drills with ragi, in place of the *avare* or *togari*.

Toward Madgiri the *navane* is of three kinds, *bili*, which is cultivated on watered land ; *kempu*, which is cultivated in palm gardens ; and *mobu*, which is cultivated in dry field. It is sometimes sown along with cotton, but is also cultivated separately. It grows on both ragi and jola ground, and does not injure the succeeding crop of either. In the course of twenty or thirty days, any time in Jeshta, Ashadha, or Srávana, the 3rd, 4th, and 5th months after the vernal equinox, plough four times. If dung can be obtained, it ought to be put on after the first ploughing. With the next rain, harrow with the rake drawn by oxen, sow broad-cast, and harrow again. The straw is reckoned next in quality to that of ragi ; but the grain, in the opinion of the natives, is inferior. A *wokkala* land sows 9 seers, and in a good crop produces 10

kolagas. In other words an acre sows 83 peck, and produces 22-21 bushels.

The navane cultivated on dry field in Sira is that called *biñi* and is raised either on the two poorer soils, or on a black mould that has been prepared for it by a crop of the pulse called *hesaru*. It is considered as exhausting to the ground ; but this is obviated by ploughing up the field immediately after the navane has been cut, thus exposing the soil to the air. In the two months following the vernal equinox, plough four times. With the next good rain, harrow with the rake drawn by oxen, and sow the seed with the drill ; putting navane in the *kurige*, and the pulse called *avare* in the *sudike*. In three months it ripens without farther trouble, and in a good crop produces 96 seeds. For cattle, the straw is better than that of rice.

Baragu—is of two kinds ; white and black. A sandy soil of any kind agrees with this corn, which is also valuable as requiring very little rain. The straw is better fodder than that of rice. In the second month after the vernal equinox, plough three times. After the next rain, in the following month, either sow with the drill, and harrow with the rake drawn by oxen, or sow broad-cast, and plough in the seed. In three months it ripens without farther trouble, and in a favourable season produces sixteen seeds.

There is only one kind cultivated in Kolar. After the heavy rains have ceased, plough twice, and without manure sow broad-cast, and plough in the seed. Without any farther trouble it ripens in two months and a half, is cut down close by the ground, stacked for one or two days, and then trodden out. The grain is kept in store-houses, and preserves well for two years. It is boiled entire, like rice. The straw is only used for fuel. A good crop produces twelve seeds, a middling one, eight. It requires a rich black clay.

Haraka—as it is found to injure the succeeding crop of *ragi*, is never in Ashtagram cultivated on the best soil, and rarely on that of the second quality. It is commonly followed by a crop of horse gram, and is seldom allowed any manure. In the spring plough five times. The dung, if any be given, must be put on before the last ploughing. When the heavy rains commence, sow broad-cast, and plough in the seed : next day form drills of *togari* in the same manner as with *ragi*.

When the sprouts are a span high, hoe with the *kunte*, once longitudinally and once across the field. Next week weed with the *ujare*. It ripens in six months ; and having been cut down near the root, is stacked for six days. It is then trodden out by cattle. The seed reserved for sowing must be well dried in the sun. The remainder is preserved in the *kznaja*, but does not keep long. It is both boiled like rice, and made into flour for dressing as *hiṭṭu*, or pudding. The straw is eaten by every kind of cattle ; but, of all the fodders used here, this is reckoned the worst.

The following is the process of cultivation in the east. At the commencement of the rains, plough three times in the course of a few days. As soon as the heavy rains begin, sow the seed broad-cast, and cover it by a third ploughing. It requires no manure, and here the pulse called *togari*, is never sown with *háraka*. At the end of a month weed it with the implement called *woravári*. It requires six months to ripen, and is cut near the root, stacked on the field for five or six days, and then dried in the sun, and trodden out. This grain is commonly preserved in pits, and does not keep longer than one year. It is never made into flour. The straw is bad forage, and is used chiefly for manure. The seed required for an acre is 1·12 peck. The produce in a good crop, is twenty fold, or 5 bushels $2\frac{1}{4}$ pecks an acre ; in a middling crop, fifteen fold, or 4 bushels $\frac{1}{2}$ peck.

Háraka at Madgiri is sown in low soft places, where, in the rainy season, water is found near the surface. The soil is of different kinds. In *Vaisákha*, *Jéshta* and *Ashádha*, or three months following the middle of April, plough three times in the course of thirty days. After the next rain that happens, harrow with the rake drawn by oxen, sow broad-cast, and then repeat the harrowing. It ripens in six months without farther trouble. As fodder for cattle, the straw is reckoned equal to that of *ragi*, or of *hurali*. The seed for a *kolaga* land is 24 seers ; the produce in a good crop is 10 *kolagas*, or 40 fold. That is to say, one acre sows 2·22 pecks, and produces 22·21 bushels.

Alsandi.—Of this grain, there is but one kind, and it is cultivated in the south only as a *kár* crop, which is performed exactly in the same manner with that of the *kar uḍḍu*. The green pods, and ripe grain, are both made into curries, by frying them in oil with tamarinds,

turmeric, onions, capsicum, and salt. Horses eat the grain ; but the straw is only useful as manure.

Hurali or *horse-gram* is of two kinds, black and white or red ; both are sown intermixed. The worst qualities of soil are those commonly used for this grain in Kolar ; and on the same fields, *sáme*, *háraka* and *huchchellu* are cultivated, without one crop injuring the other, or without a rotation being considered as of the smallest benefit. For horse-gram plough twice, in the course of a few days, any time in *Kártika*. Then after a shower sow broad-cast ; or, if none happen, steep the seed for three hours in water. Plough in the seed. It has no manure, and in three months ripens without farther trouble. Cut it down early in the morning, stack it for one day, and then dry it five days in the sun. Tread it out, and clean it with the fan. It preserves best in a store-house, but does not keep longer than one year. The forage is here reckoned inferior to *ragi* straw. The seed for an acre is 1·12 peck. The produce in a good crop is fifteen fold, or 4 bushels and $\frac{1}{2}$ peck an acre ; and in a middling one ten fold, or 2 bushels and 3 pecks.

In *Ashtagram* the two varieties, the red and the black, are always sown intermixed. In the last half of *Srávana*, plough three times. Sow broad-cast with the first rain of *Bhádrapada*. It requires no manure, and the seed is covered by a fourth ploughing. In three months it ripens without farther trouble, and is then pulled up by the roots, and stacked for eight days : after which it is spread in the sun to dry, and next day is trodden out by oxen. The seed for sowing must be well dried in the sun, and preserved in *múdes* ; the remainder is kept in pots, or in the *kanuja*. It is used for human food, either dressed as curry, or parched ; but the chief consumption of it is for cattle, both horses and bullocks. The straw is an excellent fodder, and is preferred even to that of *ragi*. It is generally sown on the two worst soils, in fields that are never used for any thing else ; but it also follows as a second crop after *jola* ; or, when from want of rain the crop of *ragi* has failed, the field is ploughed up, and sown with horse-gram. In this case, the next crop of *ragi* will be very poor, unless it be allowed a great quantity of manure. In places where the red and black horse grams are kept separate, the black kind is sown from twelve to twenty days later than the other.

The only kind cultivated towards the north-east is the white. Except after *kár e!lu*, or upon new ground, it never succeeds. The

longer the ground has been waste, especially if it has been overgrown with small bushes of the *tangali*, or *bandári*, (*cassia auriculata* and *dodonea viscosa*) so much the better for *hurali*. It grows best upon ash-coloured soil, and next to that prefers a red soil, in which there is much sand. In Srávana, burn the bushes; and either then, or in the course of the next month, plough once. After the next good rain sow the seed broad-cast, and plough the field across the former furrows. A kolaga land sows 12 seers of *hurali*, and in a good crop produces twenty seeds. In other words one acre sows 1·11 peck, and produces 5·55 bushels.

The *hurali* at Sira is black and white mixed. It grows better on stony than on sandy soils; and gives the greatest crops when cultivated on land that has been waste, and over-run with bushes; but it also thrives tolerably on land that is alternately cultivated with it and *sáme*, or *sajje*. In the month which precedes and that which follows the autumnal equinox, sow the seed broad-cast, and then cover it with the plough. In four months it ripens without farther trouble, and in a good season produces ten seeds. Both straw and husks are reckoned good for labouring cattle; but, owing probably to some idle prejudice, they are said to be bad for milch cows.

Uddu—is of two kinds; *chik uddu*, and *doḍ uddu*. The *chik uddu* seems to be a variety, with black seeds. It is cultivated in Ashtagram as follows: The ploughing commences ten days after the feast *Sivarātri*, in February. Previous to the first ploughing, if there has not recently been any rain, the field must have a little water, and then it is three times ploughed. The seed is sown immediately before the third ploughing, by which it is covered. This crop obtains neither water, manure, nor weeding. The straw, when ripe, is pulled up by the roots, stacked for three days, dried two days in the sun, and then trodden out by bullocks. The flour, made into cakes, and fried in oil, is here a common article of diet. It is also mixed with rice flour, and made into white cakes called *dósé*, which are also fried in oil, and are a favourite food. The straw is reckoned pernicious to cattle. It is thrown on the dunghill, and serves to increase the quantity of manure. The grain is always preserved in the *múde*, or straw bag.

Doḍ uddu is also called *hain uddu*. It is cultivated and managed exactly like the other kind; but the first ploughing is on the 8th day after the *Swarna Gauri vrata*, in August. The sowing season is 15

days afterwards. The straw is equally pernicious to cattle, but the grain is reckoned better than that of the *chik uddu*.

About Madgiri it grows best on a black soil, which it does not injure for the succeeding crop of jola. Plough twice in Ashádha or Srávana, the 4th and 5th months after the vernal equinox. After the next rain sow broad-cast, and plough in the seed. In $3\frac{1}{2}$ months it ripens without farther trouble. The straw is only useful as fodder for camels. A kolaga land sows twelve seers, and in a good crop produces 24 fold : in other words an acre sows 1.11 pecks and produces 6.66 bushels.

Dod uddu is cultivated in the west on good ragi soils, and is taken as an alternate crop with that grain. After cutting the ragi the field is ploughed once a month for a year. At the last ploughing some people sow the seed broad-cast, and cover it with the plough ; others drop it into the furrow after the plough. In this last case, the young plants are always too thick ; and when they are a month old, part of them must be destroyed by the hoe drawn by oxen. If sown broad-cast, the weeds at the end of a month must be removed by the hand. The seed required is $\frac{1}{10}$ of that sown of ragi, or rather less than a peck for the acre. The broad-cast sowing gives least trouble, and produces about 3.17 bushels an acre. The drill *uddu* produces $\frac{1}{8}$ more. It ripens in three months.

The *chiffu*, or lesser *uddu*, is cultivated at the same season with the *kár rági*, and requires four months to ripen. Owing to a more luxuriant growth, even when sown broad-cast, it requires the use of the hoe drawn by oxen. It is not, however, so productive as the great *uddu* ; rather less than three bushels an acre being a good crop. The quantity of seed sown is the same. Cattle eat the straw of *uddu* when mixed with the husks, and with those of hurali, kadale, avare, and togari, and with the spikes of ragi, after these have been cleared of grain. This fodder is reckoned superior to even the straw of ragi.

Hesaru.—It is of one kind only, but is cultivated in the south both as a *hain* and as a *kár* crop: in both of which the manner of cultivation is exactly the same as that of the *uddus*. The straw, being equally unfit for cattle, is reserved for manure. The grain is dressed as curry.

In the east it is commonly raised on dry field. It requires a black clay ; and, although it have no manure, it does not injure the following crop of ragi. In the course of a few days in Vaisákha, plough twice, sow

broad-cast, plough the seed, and harrow. In three months it ripens without farther trouble. It is then cut by the ground, stacked for six days, dried in the sun for four, and trodden out by oxen as usual. The grain, for use, is preserved in store-houses, and does not keep good more than two months, even although it be occasionally dried. The straw is totally useless, and will not even answer for manure. A good crop is reckoned ten seeds, a middling one, six.

The *hesaru* cultivated at Sira is called *kari*, or black, and requires a black soil, to which it is said to add much strength. It is therefore taken alternately with *navane*, or with *huchchellu*, both of which are considered as exhausting crops. It is cultivated exactly in the same manner as *hurali* is, ripens in three months, and in a good year produces sixteen seeds. Except for feeding camels, its straw or husks are of no use.

In a few places in Shimoga where there is a moist black soil, the rice-ground produces a second crop of *kadale*, and of *hesaru*. The seed for both is one-fifth of the quantity of rice that is required to sow the field; and as the soil is rich, will probably be about half a bushel the acre. For the *hesaru*, the field after the rice harvest must be ploughed twice. In the month following the shortest day, it must be watered from a reservoir, and smoothed with the implement called *koradu*. As a mark for the sower, furrows are then drawn through the whole field, at the distance of four cubits; and the seed having been sown broad-cast is covered by the plough. The field is then smoothed with the *koradu*, and in four months the crop ripens.

Wollellu—is the *sesamum orientale*; and one kind only is cultivated near Seringapatam. The *indicum*, however, is to be met with in some places not far distant, and is called the *phulagana ellu*. It is raised exactly like the *kár uddu*, cut down when ripe, and stacked for seven days. It is then exposed to the sun for three days, but at night is collected again into a heap; and, between every two days drying in the sun, it is kept a day in the heap. By this process the capsules burst of themselves, and the seed falls down on the ground. The cultivators sell the greater part of the seed to the oil-makers. This oil is here in common use with the natives, both for the table and for unction. The seed is also made into flour, which is mixed with jaggory, and formed into a variety of sweet cakes. The straw is used for fuel and for manure.

In Kolar it is more commonly called *achchellu*, and is cultivated as follows. In Vaisákha plough twice, without manure, sow broad-cast, and plough in the seed. In three months it ripens without farther trouble, is cut down by the ground, and is afterwards managed exactly like the *uddu*. The seed is preserved in the same manner. The produce in a good crop is 20 seeds, and in a middling one twelve. The straw is used for fuel.

North of the Tûmkûr District, are cultivated two kinds of *sesamum*, the *karu* or *wollec!lu*, and the *gur-ellu*. The last forms part of the watered crops; the *kar-ellu* is cultivated on dry field. The soil best fitted for it is *dare*, or stony land, which answers also for *sáme*, and *hurali*. The ground on which *kar-ellu* has been cultivated, will answer for the last mentioned grain; but not so well as that which has been uncultivated. After it, even without dung, *sáme* thrives well. The same ground will every year produce a good crop of this *ellu*. If a crop of *ellu* is taken one year, and a crop of *sáme* the next, and so on successively, the crops of *ellu* will be poor, but those of *sáme* will be good. After the first rain that happens in Vaisákha, which begins about the middle of April, plough three times. With the next rain sow broad-cast, and plough in the seed. In between four and five months, it ripens without farther trouble. On a *wokkai* land the seed is six seers, and the produce in a good crop is 5 *kolagas*, or eighty fold. Which is to say that an acre sows 55 peck, and produces 11·10 bushels.

In the west the *kar-ellu*, is sown on *râgi* fields that consist of a red soil, and does not exhaust them. The field is ploughed as for *râgi*, but it is not allowed manure. The seed is mixed with sand, sown broad-cast, and harrowed with the rake drawn by oxen. It ripens in four months without farther trouble. The seed is equal to $\frac{1}{2}$ of the *râgi* that would be sown on the same field, which is less than half a peck an acre. The produce is about twenty seeds, or about $2\frac{1}{2}$ bushels an acre. The straw is burned, and the ashes are used for manure.

Huchchellu—or the *foolish-oil-plant* is near Seringapatam most commonly sown after *jola*, as a second crop. When that has been reaped, plough four times in the course of eight days. Toward the end of *Srávana*, or about the middle of August, after a good rain, sow broad-cast, and plough in the seed. It requires neither manure nor weeding, and ripens in three months. It is cut near the root, and stacked for

eight days. Then, having been for two or three days exposed to the sun, the seed is beaten out with a stick, and separated from fragments of the plant by a fan. The seed is kept in pots. Part of it is parched and made into sweetmeats with jaggory; but the greater part is sold to the oil-maker for expression. This oil is used in cookery, but is reckoned inferior to that of *wollellu*. The stems are a favourite food of the camel; but are disliked by the bullock, though want often forces this animal to eat them. When not used as a second crop after jola, it is always sown on the two poorer soils.

The *huchchellu* near Bangalore is managed exactly in the same manner as the *wollellu*. The seventy seers measure require a little more water than the other *ellu*, and gives 65 seers of oil (or a little more than $4\frac{1}{2}$ gallons). This also is used for the table. The cake is never used for curry, but is commonly given to milch cattle.

Huchchellu is never sown at Kolar as a second crop. After the male, or heavy rains are over, plough once, sow broad-cast, and plough in the seed. It gets no manure, and in three months ripens without farther trouble. It is then cut down near the root, stacked for six days, dried in the sun for three, and trodden out. The seed is preserved in store-houses; the straw is used only as manure. For seed, an acre requires 35 parts of a peck, and in a good crop produces rather more than one bushel, while in a middling one it does not produce quite $3\frac{1}{2}$ pecks.

In Madgiri *huchchellu* is sown in places called *jarrugu*, or sticking-land, which are situated at the bottom of rocks; from whence in the rainy season the water filters, and renders the soil very moist. In such places nothing else will thrive. When the rain has set in so late as to prevent the cultivation of any thing else, the *huchchellu* is sown also on any land, especially on ragi fields. On such soils, however, it does not succeed. In Bhádrapada or Asvija (from about the middle of August till about that of October), plough once, sow broad-cast, and plough in the seed, which ripens in four months. On a *kolaga* land sow six seers, which in a good crop will produce four kolagas. In other words an acre sows 56 peck, and produces 88 bushels.

Haralu.—Two varieties of it are common; the *chikka*, or little haralu, cultivated in gardens; and the *dodda*, or great haralu, that is cultivated in the fields. To grow the latter:—In the spring, plough five times before the 15th of Vaisakha. With the first good rain that

happens afterwards, draw furrows all over the field at a cubit's distance ; and having put the seeds into these at a similar distance, cover them by drawing furrows close to the former. When the plants are eight inches high, hoe the intervals by drawing the *kunte* first longitudinally, and then transversely. When the plants are a cubit and a half high, give the intervals a double ploughing. The plant requires no manure, and in eight months begins to produce ripe fruit. A bunch is known to be ripe by one or two of the capsules bursting ; and then all those which are ripe are collected by breaking them off with the hand. They are afterwards put into a heap or large basket ; and the bunches, as they ripen, are collected once a week, till the commencement of the next rainy season, when the plant dies. Once in three weeks or a month, when the heap collected is sufficiently large, the capsules are for three or four days spread out to the sun, and then beaten with a stick to make them burst. The seed is then picked out from the husks, and either made by the family into oil for domestic use, or sold to the oil-makers. It is cultivated on the two best qualities of land, and on the better kinds of *marlu*. When the same piece of ground is reserved always for the cultivation of this plant, the succeeding crops are better than the first ; when cultivated alternately with ragi, it seems neither to improve nor injure the soil for that grain.

In Kolar District both the great and small kinds are cultivated ; but, although the mode of cultivation is the same for both, they are always kept separate. In the beginning of the female or slight rains plough twice. When the rains become heavy, plough again ; and then, at the distance of $\frac{3}{4}$ of a cubit from each other in all directions, place the seeds in the furrows. When the plants are a span high, weed with the plough, throwing the earth up in ridges at the roots of the plants. At the end of the first and second months from the former weeding, repeat this operation. In four months it begins to give ripe fruit ; and once in four days the bunches that are ripe are collected in a pit until a sufficient quantity is procured. It is then exposed to the sun, and the husks are beaten off with a stick. In the May following, the plant dries up, and is cut for fuel. It is only cultivated in the good ragi soils, which it rather improves for that grain, although it gets no dung. The small kind is reckoned the best, and most productive.

Haralu is cultivated in the north-east on a particular soil, which is reserved for the purpose, and consists of ash-coloured clay mixed with

sand. There are here in common use three kinds of *haralu*; the *phola* or field; and the *doḍḍa*, and *chiṭṭu*, which are cultivated in gardens. A red kind is also to be seen in gardens, where it is raised as an ornament. The *chiṭ haralu* produces the best oil. Next to it is the *phola* that is cultivated in the fields. In the course of a few days, any time in the three months following the vernal equinox, plough three times. With the next rain that happens, plough again, and at the same time drop the seeds in one furrow at the distance of one cubit and a half, and then cover them with the next furrow. A month afterwards hoe with the *kunte*, so as to kill the weeds, and to throw the earth in ridges toward the roots of the plant. It ripens without farther trouble. At the time the *haralu* is planted, seeds of the pulses called *avare* and *togari* are commonly scattered through the field. In four months after this, the *haralu* begins to produce ripe fruit, and for three months continues in full crop. For two months more it produces small quantities. A *wokkala* land sows 9 seers of seed, and in a good crop produces 4 *kolagas*. That is to say an acre sows 83 peck, and produces 8·8 bushels.

Haralu, of the kind called *phola*, is cultivated at Sira. For this a sandy soil is reckoned best; and as it is thought to improve the soil, the little *rāgi* that is sown on dry field generally follows it. In the first month after the vernal equinox, plough twice; then, with the first rain in the next month, at every cubit's distance throughout the field, draw furrows intersecting each other at right angles. At every intersection drop a seed, and cover them with another furrow. After two months weed with the plough; and with the *kunte*, or hoe drawn by oxen, throw the earth in ridges toward the young plants. In six months it begins to give ripe fruit, which for three months is gathered once a week.

Sanabu.—For the cultivation of this plant as pursued in the Bangalore District, the soil ought to be red or black, like the best kind used for cultivation of *rāgi*. It is allowed no manure; and the seed is sown broad-cast on the ground, without any previous cultivation, at the season when the rains become what the natives call *male*, that is to say, when they become heavy. After being sown, the field is ploughed twice, once lengthwise, and once across; but receives no farther cultivation. At other times the *sanabu* is cultivated on rice ground in the dry season; but it must then be watered from a canal, or reservoir. It requires four months to ripen, which is known by the seeds having come to full

maturity. After being cut down, it is spread out to the sun, and dried. The seed is then beaten out by striking the pods with a stick. After this, the stems are tied up in large bundles, about two fathoms in circumference, and are preserved in stacks or under sheds.

Cotton.—The soil on which it is sown at Sira is a black clay containing nodules of limestone. In the two months following the vernal equinox, plough three times. At any convenient time, in the two next months, mix the seed with dung, and drop it in the furrows after the plough, forming lines about nine inches apart. A month afterwards plough again between the lines; and in order to destroy the superfluous plants and weeds, use the hoe drawn by oxen three times, crossing these furrows at right angles. The second and third times that this hoe is used, it must follow the same track as at first; otherwise too many of the plants would be destroyed. Between each hoeing three or four days should intervene. In six months the cotton begins to produce ripe capsules, and continues in crop four more. The plants are then cut close to the ground; and after the next rainy season the field is ploughed twice in contrary directions. A month afterwards it is hoed once or twice with the same implement, and it produces a crop twice as great as it did in the first year. In the third year a crop of *sâme* or *navane* must be taken, and in the fourth year cotton is again sown as at first.

The principal crop in the fine country towards Narsipur and Talkad is cotton, which there is never raised in soil that contains calcareous nodules. The black soil that is free from lime is divided into three qualities. The first gives annually two crops, one of jola and one of cotton; the two inferior qualities produce cotton only.

Cotton is raised towards Harihar entirely on black soil, and is either sown as a crop by itself, or drilled in the rows of a navane field. In the former case, two crops of cotton cannot follow each other, but one crop of jola at least must intervene. In the second month after the vernal equinox, the field is ploughed once, then manured, then hoed with the *heg kunte*; and the grass is kept down by occasional hoeings with the *bolu kunte*, until the sowing season in the month preceding the autumnal equinox. The seed is sown by a drill having only two bills, behind each of which is fixed a sharp pointed bamboo, through which a man drops the seed; so that each drill requires the attendance of three men, and two oxen. The

seed, in order to allow it to run through the bamboo, is first dipt in cow-dung and water, and then mixed with some earth. Twenty days after sowing, and also on the 35th and 50th days, the field is hoed with the *edde kunte*. The crop season is during the month before and that after the vernal equinox.

Tobacco—is sown in Banavar in the dry field cultivated for *ragi* and other similar grains, of which a crop must intervene between every two crops of tobacco. When the season proves very wet, it cannot be cultivated, and it requires a good *ragi* soil. A few small stones do no harm, but it will not grow on the hard soil called *dare*; and, in fact, the soil of the first quality is that usually employed, though sometimes the tobacco is planted on the best fields of the second quality. In the three months following the vernal equinox, the field ought, if possible, to be ploughed ten times; but some of these ploughings are often neglected. After the 4th or 5th time, sheep and cattle must for some nights be kept on the field for manure. During the last fifteen days of the second month after midsummer, small holes are made throughout the field. They are formed with the hand, and disposed in rows distant from each other $1\frac{1}{2}$ cubit; and in every hole a young tobacco plant is set. This being the rainy season, the tobacco requires no watering, unless during the first ten days from its having been transplanted there should happen to be two successive fair days. In this case, on the second fair day, water must be given with a pot. On the 15th day a little dung is put into each hole, and the field is hoed with the *kunte*. Every fourth or fifth day until the tobacco is cut, this is repeated, so as to keep the soil open and well pulverized. At the end of a month and a half, the top shoots of the plants are pinched off, and every eight or ten days this is repeated; so that six or seven leaves only are permitted to remain on each stem. In the month preceding the shortest day, it is fit for cutting.

The stems are cut about four or five inches from the ground, and are then split lengthwise; so that each portion has three or four leaves. These half stems are strung upon a line, which is passed through their root ends; and then for twenty days they are spread out to the sun and air. Every third day they are turned, and they must be covered with mats should there happen to be rain; but at this season that seldom comes. The tobacco is then taken into the house, put into a heap, and turned four or five times, with an interval of three days between each

time. It is then fit for sale, and by the merchants is made up into bundles which include the stems.

In order to prepare the seedlings, a plot of ground must be dug in the month which precedes the longest day. It must be then cleared from stones, and separated by little banks into squares for watering, in the same manner as in this country is done to kitchen gardens. The tobacco seed is then mixed with dung, and sown in the squares, which are smoothed with the hand, sprinkled with water, and then covered with branches of the wild date. Every third day it must be watered. On the 8th day the plants come up, and then the palm branches must be removed. If the plants be wanted soon, they ought to have more dung, and to be kept clear from weeds. With this management, they are fit for transplanting in from a month to six weeks. If they are not wanted for two months, or ten weeks, the second dunging is omitted, and the growth of the plants is checked by giving them no water for eight days after they come up.

Sasive—is a mustard which is always sown, in the east, mixed with ragi. It ripens sooner than that grain; and, when dry, the branches are broken with the hand, exposed two days to the sun, and then beaten out with a stick. In this country, oil is never made from the seed, as is usual in Bengal; it is employed as a seasoning in curries and pickles.

Kadale—always requires a black mould; and is cultivated, in the west, partly as a second crop after ragi, and partly on fields that have given no other crop in the year. In this case, the produce is much greater, and the manner of cultivation is as follows. In the two months preceding the autumnal equinox, the ragi having been cut, the field is ploughed once a month for fourteen or fifteen months. Then in the course of four or five days plough twice. After the last ploughing, drop the seed in the furrows at six inches distance from each other, and it ripens without farther trouble. The seed is sown as thick as that of ragi, and a *kandaga* sowing in a good crop produces 1,400 seers, which is at the rate of rather less than 7 bushels an acre.

It is a considerable crop in the south-east of the Mysore District, but so exhausts the soil of even the richest fields that it is seldom taken from the same ground oftener than once in seven years. It is generally sown after jola in place of cotton, and must be followed by wheat, wol||ellu or ragi. The two former may be followed by cotton, the ragi cannot. In

the third year, when ragi has been used, the field is sown with navane or jola, succeeded as usual by cotton. Immediately after the jola has been cut, which is about the autumnal equinox, the field is ploughed once, then dunged, and then ploughed three times, all in the course of a month. In the beginning of the second month after the autumnal equinox, the kadale is sown in drills like the cotton; but the drills are only half a cubit distant. Between the drills, on the 15th day, the hoe drawn by oxen is used. On the 30th the weeds are removed by the *kale kudagali*. If the soil be rather hard, about the 33rd day the hoe drawn by oxen must be again used. In four months the *kaḍale* ripens. Its produce from the same extent of ground, is the same with that of navane; but a *nūr-kamba* requires 45 seers of seed, or an acre 1.48 peck. Kadale is sometimes sown after a fallow; in which case the ground is prepared in a similar manner as for cotton in the two poorer soils. The produce in this case from a *nūr-kamba* in a good crop is 1,080 seers, or of an acre almost 9 bushels.

Towards Harihar, a few rich spots are reserved solely for the cultivation of *kaḍale*, and these are cultivated in the following manner. In the month following the vernal equinox the field is ploughed once, then manured, and in the following month is hoed with the *heg kunte*. Between that period and the month preceding the shortest day, the grass is ploughed down twice, and the seed is sown with the sharp bamboo following the plough, and covered with the *heg kunte*. It ripens in three months.

Wheat.—There are two kinds cultivated, *jave góḍhi* (*triticum monococcum*) and *hotle góḍhi* (*triticum spelta*). For the former, in Kolar, the ground is sometimes ploughed five times; and sometimes dug with the hoe called *kol gudali* to the depth of one cubit, which is reckoned preferable. In Jeshta (May—June) the seed is sown broad-cast, and covered with the hoe. The channels and squares are then formed, as for poppies; and the ground is smoothed with the hand and dunged; while such of the seed, as may happen to be above the ground, is pushed down with the finger. In forty-five days the field must be watered nine times. It is then weeded with the instrument called *woravari*; after which one watering in six days suffices. It ripens in three months, is cut, tied up in small sheaves, and stacked for four days. It is then dried one day in the sun, and thrashed out by beating the sheaves against a log of

timber. To separate the awns, the grain is then beaten with a stick. In the fields of wheat, radishes are planted on the mounds which divide the squares.

In the black clay in Madgiri, wheat of the kind called *jave godhi* is the most common crop. It is but a poor grain, and five twelfths of it consist of husks. Any time in Pushya (Dec.—Jan.) plough once; next day, if there be no rain, water the field, and plough again across, dropping the seed in the same manner as in sowing jola. The plots must be formed in the same manner. It gets no manure nor weeding, and requires only three waterings, on the 40th, 60th and 80th days. It is much subject to disease, and not above one crop in four is good. After reaping the wheat, the field, in order to expose the soil to the rain, must be immediately ploughed.

In Sira, in place of the *Vaisikha* crop, when there is a scarcity of water, wheat, both *jave* and *hotte*, are sown on rice-lands. These grains may be followed by a *Kirtika* crop of ragi; but by this process the ground is as much exhausted as if it had been sown with navane. If the *Kirtika* crop be altogether left out, the *Vaisikha* crop of rice following wheat will be as good as if the ground had been regularly cultivated for rice alone; and in India it is a commonly received opinion, that where a supply of water admits of it, ground can never be in such good heart as when regularly cultivated by a succession of rice crops. Wheat requires a clay soil, and the manner of cultivating both kinds is the same. In the two months preceding, and the one following the autumnal equinox, plough five times. In the following month, after a rain, or after having watered the field, plough again, and drop the seed into the furrows. Then divide it into squares, as for jola, and water it once a month. The straw is only used for fire. If given to cattle for fodder, it is supposed capable of producing the distemper.

A very small quantity of the wheat called *jave godhi* is raised near Periyapatna on fields of a very rich soil, from which alternate crops of *kadale* and of it are taken. The manure is given to the *kadale*; but wheat requires none. From the winter to the summer solstice plough once a month. Then in the following month plough twice, sow broadcast, and cover the seed with the plough. It ripens in four months without farther trouble. The seed required for an acre is about 4·7 pecks; the produce is 10 seeds, or rather less than 12 bushels.

The wheat raised near Narsipur in the Mysore district is of the kind called *hotte gódhí*, and there are two seasons for its cultivation, the *hain* and *kár*. It is sown on the best soil only, and always after a crop of *kadale*. The *kár* season, when the rains set in early, is always preferred, not only as the wheat is then more productive, but as in the same year it may be followed by a crop of cotton, which is not the case with the *hain* wheat. In the two months following the vernal equinox, the field for *kár* wheat is dugged, ploughed two or three times, and then hoed with the *kunte*, which is drawn by oxen. The seed is then sown, in drills one cubit distant, by dropping it in the furrow after a plough. On the 15th, 28th and 35th days the hoe is again used and two or three days afterwards the weeds are removed by the *kale kudagalu*. This wheat ripens in three months and a half, and is immediately followed by a crop of cotton. A *núr-kamba* requires seven *kolagas* of seed, and in a good crop produces 540 seers. An acre, therefore, sows a little more than one peck, and yields almost four bushels and a half. The wheat is liable to be spoiled by a disease called *arsina mári*; owing to which, in the course of one day, it becomes yellow and dies.

When the rains are late in coming, the *hain* crop of wheat is taken after *kadale*. Cotton cannot be taken in the same year. The manner of cultivation is the same as for the *kár* crop, only the season is different. The ploughings are performed in the month which precedes the autumnal equinox, or in the beginning of that which follows. At the end of this month the seed is sown. The produce is about one half only of that of the *kar* crop.

Rice.—Throughout India there are three modes of sowing the seed of rice, from whence arise three kinds of cultivation. In the first mode the seed is sown dry on the fields that are to rear it to maturity: this is called the *bara batta* or *puñaji*. In the second mode the seed is made to vegetate before it is sown; and the field when fitted to receive it is reduced to a puddle: this is called *moḷe latta*. In the third kind of cultivation the seed is sown very thick in a small plot of ground; and when it has shot up to about a foot high, the young rice is transplanted into the fields where it is to ripen: this is called *náñi*.

The kinds of rice cultivated at Seringapatam are as follow:—*dodḍa batta*, *hotte kembatti*, *arsina kembatti*, *sukadás*, *murarjila*, *yallakki*

raja, konavali, bili sanna batta, putta batta, kari kallu. With the exception of the first, which takes 7 months, all the other kinds ripen in $5\frac{1}{2}$ months.

In the hain crop the following is the management of the dry-seed cultivation. During the months Phālguna, Chaitra and Vaisākha, that is from February till May, plough twice a month; having, three days previous to the first ploughing in Phālguna, softened the soil by giving the field water. After the fourth ploughing the field must be manured with dung, procured either from the city or cow-house. After the fifth ploughing the fields must be watered either by rain or from the canal; and three days afterwards the seed must be sown broad-cast and then covered by the sixth ploughing. Any rain that happens to fall for the first thirty days after sowing the seed must be allowed to run off by a breach in the bank which surrounds the field; and should much rain fall at this season, the crop is considerably injured. Should there have been no rain for the first thirty days, the field must be kept constantly inundated till the crop be ripe; but if there have been occasional showers the inundation should not commence till the 45th day. Weeding and loosening the soil about the roots of the young plants with the hand, and placing them at proper distances, where sown too close or too far apart, must be performed three times; 1st on the 45th or 50th day; 2ndly 20 days afterwards; and 3rdly 15 days after the second weeding. These periods refer to the crops that require seven months to ripen. In rice which ripens in $5\frac{1}{2}$ months the field must be inundated on the 20th day; and the weedings are on the 20th, 30th and 40th days.

In the hain crop the following is the manner of conducting the sprouted-seed cultivation. The ploughing season occupies the month of Ashāḍha, (June-July). During the whole of this time the field is inundated and is ploughed four times; while at each ploughing it is turned over twice in two different directions which cross each other at right angles. This may be called double ploughing. About the first of Srāvana the field is manured, immediately gets a fifth ploughing, and the mud is smoothed by the labourers' feet. All the water except one inch in depth must then be let off, and the prepared seed must be sown broad-cast. As it sinks in the mud it requires no labour to cover it. For the first twenty-four days the field must once every other day have some water, and must afterwards, until ripe, be kept constantly inundated. The weedings are

on the 25th, 35th and 50th days. In order to prepare the seed it must be put into a pot, and kept for three days covered with water. It is then mixed with an equal quantity of rotten cow-dung, and laid on a heap in some part of the house, entirely sheltered from the wind. The heap is well covered with straw and mats; and at the end of three days the seed having shot out sprouts about an inch in length, is found fit for sowing. This manner of cultivation is much more troublesome than that called dry-seed: and the produce from the same extent of ground is in both nearly equal; but the sprouted-seed cultivation gives time for a preceding crop of pulse on the same field, and saves a quarter of the seed.

Two distinctions are made in the manner of cultivating transplanted rice; the one called *baravúgi* or by *dry-plants*; and the other called *nirúgi* or by *wet plants*. For both kinds low land is required.

The manner of raising the dry-seedlings for the hain crop is as follows:—Labour the ground at the same season, and in the same manner as for the dry-seed crop. On the first of Jészta, or in May, give the manure, sow the seed very thick and cover it with the plough. If no rain fall before the 8th day, then water the field, and again on the 22nd; but if there are any showers these waterings are unnecessary. From the 45th till the 60th day the plants continue fit to be removed. In order to be able to raise them for transplanting, the field must be inundated for five days before they are plucked.

The ground on which the dry-seedlings are to be ripened is ploughed four times in the course of eight weeks, commencing about the 15th of Jészta; but must all the while be inundated. The manure is given before the 4th ploughing. After this, the mud having been smoothed by the feet, the seedlings are transplanted into it, and from three to five plants are stuck together into the mud at about a span distance from the other little branches. The water is then let off for a day: afterwards the field, till the grain is ripe, is kept constantly inundated. The weedings are performed on the 20th, 35th and 45th days after transplanting.

The manner of raising the wet-seedlings for the transplanted crop in the hain season is as follows:—In the month Phalguna (Feb.—Mar.) plough the ground three times, while it is dry. On the first of Jészta inundate the field; and in the course of 15 days plough it four times. After the 4th ploughing smooth the mud with the feet, sow the seed very thick and sprinkle dung over it: then let off the water. On the 3rd, 6th

and 9th days water again ; but the water must be let off and not allowed to stagnate on the field. After the 12th day inundate until the seedlings be fit for transplantation, which will be on the 30th day from sowing. The cultivation of the field into which the seedlings are transplanted is exactly the same as that for the dry-seedlings. The plot on which the seedlings are raised produces no crop of pulse ; but various kinds of these grains are sown on the fields that are to ripen the transplanted crop, and are cut down immediately before the ploughing for the rice commences. The produce of the transplanted crop is nearly equal to that of the dry seed cultivation ; and on a good soil, properly cultivated, twenty times the seed sown is an average crop.

The kar crops, according to the time of sowing, are divided into three kinds. When the farm is properly stocked, the seed is sown at the most favourable season, and the crop is then called the *Kumba kár* ; but if there be a want of hands or cattle, part of the seed is sown earlier, and part later than the proper season ; and then it produces from 30 to 50 per cent less than the full crop. When sown too early the crop is called *Tula kár* ; when too late it is called *Mésha kár*. The produce of the *hain* and *Kumba kár* crops is nearly the same.*

No Tula kar dry seed is ever sown. The ploughing season for the Kumba kar dry seed is in Bhádrapada (August), and the seed is sown about the end of Márgasira (December). In the Mésha kar dry seed the ploughing commences on the first of Chaitra (March), and the seed is sown at the feast of Chitra Purnami in April.

The Tula kar sprouted seed is sown on the 1st Kártika, (October,) the ploughing having commenced with the feast Navarátri, in September. The Kumba kar sprouted seed is sown in Pushya about 1st of January. The ploughing season occupies a month. The ploughing for the Mésha kar sprouted seed commences about the 15th of Chaitra. The seed is sown about the 16th of Vaisákha (May).

The Kumba kar transplanted rice is cultivated only as watered seedlings. The ground for the seedlings begins to be ploughed in the end of Kártika or middle of November, and the seed is sown on the 15th Pushya or end of December. The fields on which this crop is ripened are begun to be ploughed in the middle of Márgasira (1st December). The transplanting takes place about the 15th of Mágha or end of January.

* *Kumba* or *Kumbha* is the sign Aquarius ; *Tula* is Libra, and *Mesha* is Aries.

The Tula kár transplanted rice also is sown *nírági* about the 30th of Asvija or middle of October, and in a month afterwards is transplanted. The Mésa kár transplanted rice is also sown as watered seedlings, about the 15th of Vaisákha (May,) and about a month afterwards is transplanted. The regular kár crop of the transplanted cultivation does not interfere with a preceding crop of pulse; but this is lost, when from want of stock sufficient to cultivate it at the proper time the early or late seasons are adopted. The various modes of cultivating the rice give a great advantage to the former; as by dividing the labour over great part of the year fewer hands and less stock are required to cultivate the same extent of ground than if there was only one seed time, and one harvest.

The manner of reaping and preserving all the kinds of rice is nearly the same. About a week before the corn is fit for reaping, the water is let off, that the ground may dry. The corn is cut down about four inches from the ground with a reaping-hook called *kulagalu* or *kudagu*. Without being bound up in sheaves it is put into small stacks, about twelve feet high; in which the stalks are placed outwards and the ears inwards. Here the corn remains a week, or if it rain fourteen days. It is then spread out on a threshing floor, made smooth with clay, cow-dung and water; and is trodden out by driving bullocks over it. If there has been rain, the corn after having been threshed, must be dried in the sun; but in dry weather this trouble is unnecessary. It is then put up in heaps called *ráshi* which contain about 60 kandagas, or $33\frac{1}{4}$ bushels. The heaps are marked with clay and carefully covered with straw. A trench is then dug round it to keep off the water. For twenty or thirty days, (formerly, till the division of the crop between the Government and the cultivator took place), the corn is allowed to remain in the heap.

The grain is always preserved in the husk, or, as the English in India say, in *paddy*. There are in use here various ways for keeping paddy. Some preserve it in large earthen jars that are kept in the house. Some keep it in pits called *hageru*. In a hard stony soil they dig a narrow shaft, 15 or 16 cubits deep. The sides of this are then dug away so as to form a cave with a roof about two cubits thick. The floor, sides and roof are lined with straw; and the cave is then filled with paddy. These pits contain from 15 to 30 kandagas, or from $83\frac{1}{2}$ to 167 Winchester bushels. When the paddy is wanted to be

beaten out into rice, the whole pit must at once be emptied. Other people again build *kanajas*, or store-houses, which are strongly floored with plank to keep out the bandicoots or rats. In these store houses there is no opening for air ; but they have a row of doors one above another, for taking out the grain, as it is wanted. Another manner of preserving grain is in small cylindrical stores, which the potters make of clay, and which are called *wóle*. The mouth is covered by an inverted pot ; and the paddy, as wanted, is drawn out from a small hole at the bottom. Finally, others preserve their paddy in a kind of bags made of straw, and called *múle*. Of these different means the *kanuja* and *wóle* are reckoned the best. Paddy will keep two years without alteration, and four years without being unfit for use. Longer than this does not answer, as the grain becomes both unwholesome and unpalatable. No person here attempts to preserve rice any length of time ; for it is known by experience to be very perishable. All the kinds of paddy are found to preserve equally well. That intended for seed must be beaten off from the straw as soon as cut down, and dried for three days in the sun, after which it is usually kept in straw bags.

There are two manners of making *paddy* into rice ; one by boiling it previously to beating ; and the other by beating alone. The boiling is also done in two days. By the first is prepared the rice intended for the use of *rájas*, and other luxurious persons. A pot is filled with equal parts of water and paddy, which is allowed to soak all night, and in the morning is boiled for half an hour. The paddy is then spread out in the shade for fifteen days, and afterwards dried in the sun for two hours. It is then beaten, to remove the husks. Each grain is broken by this operation into four or five pieces, from whence it is called *aidu nígu alki*, or five-piece rice. When dressed, this kind of rice swells very much. It is always prepared in the families of the *rájas*, and is never made for sale. The operation is very liable to fail ; and in that case the rice is totally lost.

Rice prepared by boiling in the common manner is called *kudupal alki*, and is destined for the use of the Sudras, or such low persons as are able to procure it. Five parts of paddy are put into a pot with one part of water, and boiled for about two hours, till it is observed that one or two of the grains have burst. It is then spread out in the sun for two hours ; and this drying is repeated on the next day ; after which the

paddy is immediately beaten. Ten parts of paddy, by this operation give five parts of rice, of which one part goes to the person who prepares it, for his trouble. Ten seers of paddy are therefore equal in value to only four seers of rice.

The rice used by the Brahmans, and called *hasi akki*, is never boiled. On the day before it is to be beaten, the paddy must be exposed two hours to the sun. If it were beaten immediately after being dried, the grain would break, and there would be a considerable loss. Even with this precaution many of the grains break ; and, when these are separated from the entire rice to render it saleable, the *hasi akki* sells dearer than the *kudupal akki*, in the proportion of nine to eight.

The beating is performed chiefly by women. They sometimes, for this purpose, use the *yáta*, or a block of timber fastened to a wooden lever, which is supported on its centre. The woman raises the block by pressing with her foot on the far end of the lever, and by removing her foot allows the block to fall down on the grain. The more common way, however, of beating paddy, is by means of a wooden pestle, which is generally about four feet in length, and three inches in diameter, which is made of heavy timber, and shod with iron. The grain is put into a hole formed in a rock or stone. The pestle is first raised with the one hand, and then with the other ; which is very hard labour for the women.

The kinds of rice cultivated at Mandya are *dodda batta*, *putta batta*, *hote kembatti*, *konawali*, and *mulu batta*. The first four take each five months to ripen, and the last, three. Every kind may be cultivated, either as *hain* or *kár*. The mulu batta is never sown except when there is a deficiency of water. The only cultivation here is the *mole batta*, or sprouted-seed ; the manner of preparing which is as follows : Steep the seed in water all night ; next morning mix it with cow-dung, and fresh plants of the *tumbe soppu*, (*philomis esculenta*,) and put it in a *múde*. On the *múde* place a heavy stone, and on the two following days sprinkle it with water. On the third day it is fit for sowing.

For the *hain* crop, the ploughings, from about the 1st of June till the middle of July are nine in number. Dung and leaves are then put on the field, and trampled into the mud. The water is now let off, until no more than a depth of one inch remains ; afterwards, the seed is sown and a slight sprinkling of dung laid over it. A watering once in three days is then given ; and after the third time, the field is inundated till

the grain ripens. The weeds are removed on the 20th, 40th, and 60th days. The kár cultivation is exactly the same, only the ploughings are in November and December. In both kinds of cultivation, and in every species of rice, an equal quantity of seed is sown on the same extent of ground, and the produce is nearly equal. The seed for an acre is 1 bushel 1·62 gallon, and the produce 36 bushels 72 gallon, or thirty fold.

Of the different kinds of rice cultivated at Maddur *arisma kembatti*, *puṭṭa batta*, *yūlakki rāja*, *sukadas*, *konavali*, and *murarjila*, are equal in produce. The first four ripen in 4½ months, the next in 5 and the last in 6. The seed required for one acre of these is 3 pecks 62 of a gallon, and the produce on first quality of soil 114 seeds or 47 bushels 1 peck 1·6 gallon, on second quality 100 seeds or 35—2—0·7 and on third, half that quantity. *Hote kembatti* and *doḍḍa* or *bāli batta*, which ripen in 5 months, require 1 bushel 1·46 gallon of seed per acre and produce 100, 70 or 40 fold according to quality of soil. All the kinds of rice may be raised either as hain or kár crops, or the mole or náti modes of cultivation. No *puṇji* is ever attempted. The seedlings for transplantation, in the náti cultivation, are always raised as nūṛgi. The produce of the same kind of rice in the same soil, whether cultivated as hain or kar, or as mole or náti, is nearly the same.

The seasons for cultivating rice in the Kolar District are two; and the two crops, from the months in which they ripen, are named the *Kártika* and *Vaisákha*. In this neighbourhood no rice is transplanted. When the seed is sown dry, the cultivation is called *puleḍi*; when it is prepared by being sprouted, it is called *mole*.

The only kind of rice cultivated as *puleḍi*, or dry seed, is the *doḍḍa baira*; and it is only sown in this manner for the Kártika crop. In the course of Vaisákha and Jeshta plough the ground without water four times. About the end of the latter month (June), after a day's rain, sow the seed broad-cast, and cover it with the plough. Then harrow the field with the implement called *halve*. The crop has no manure, and the field is not inundated till the end of the second month; when it must be harrowed again, and the weeds removed by the hand. A good crop of this is reckoned fifteen seeds, a middling one ten seeds.

The *mole* for the Kártika crop is cultivated as follows: In Asháḍha, and the first half of Sravana plough from seven to nine times, the field being always inundated. Then manure it, either with leaves or dung; both are rarely given: but, could they be procured, this

would greatly increase the produce. Then let out all the water, except two inches in depth, and sow the prepared seed broad-cast. Next day the field is dried, and sprinkled with some dung. At the end of three days it is covered with water for four hours. On the seventh water the field for a whole day. After the tenth day, it must be kept constantly inundated to the depth of two inches. At the end of the month harrow it once lengthwise; on the third day harrow it across; and on the fifth day harrow again lengthwise. Four days afterwards weed with the hand, and repeat this after an interval of two weeks.

All kinds of rice are cultivated in the same manner. The rice for seed, after being trodden out, must be dried three or four days in the sun; and may be kept either in a straw *múde*, or in a store called *kañaja*. When it is to be prepared, it must be dried one day in the sun; then soaked a night in water; and next morning it must be mixed with *haraḷu* leaves and dung, and tied up in straw. This is dipped in water, and placed under a large stone. In two days it must again be dipped, and is then fit for sowing. To sow an acre, the large grained rices require about 1·037 Winchester bushel; 1·09 bushel of the small grained rices is sufficient. The produce of the *doḷḍa baira*, which is the common coarse grain of the country, is the greatest. A good crop of this is said to be 15 seeds, or nearly 20½ bushels an acre; and middling crop about 10 seeds, or 13·7 bushels. The other kinds, on the same extent of ground, produce eight or ten seers less.

The *moḷe* cultivation for the Vaisákha crop is as follows. Having inundated the field, plough it five or six days during the course of the twenty days preceding the feast *Dipávaḷi*. In the course of the next month plough four times. Then let out all the water, except two inches in depth; manure with leaves; and, having trodden these well into the mud, sow the prepared seed broad-cast. Next day dry the field, and manure it with dung. Three days after, water for two hours. Then every second day, for three times, water for four or five hours. Afterwards keep the field inundated. At the end of the month harrow, with the *halive*, three times in three directions, with a day's rest between each harrowing. A week afterwards weed with the hand, and in two weeks repeat this operation. This is the most productive crop, and gives from one to two seeds more than that which is reaped in *Kartika*.

The mode of cultivation, or the season of sowing, makes no difference here in the quality of the grain, nor in the length of time that it will keep good. The grain is always preserved in the husk ; and until wanted for immediate consumption, is never beaten. In store-houses, or *kanajas*, if well dried in the sun previous to its having been put up, it preserves well for two years. Paddy is sometimes kept in pits, or in the straw packages called *múdes* ; but these are inferior to the store-house.

At Madgiri, when there is plenty of water, the same ground in the course of the year gives two crops, the *Kartika* and *Vaisakha*. The former, provided two crops are taken, is the most productive ; but, if the *Kartika* be omitted, the *Vaisákha* gives a greater return than the *Kártika* alone would have given ; not, however, equal to the produce of both crops. The quality of the grain in both crops is the same. The *Vaisakha* crop, although raised in the dry season, is the one most regularly taken. For this crop all the kinds of rice may be sown ; for the *Kártika* crop the *bili sanna batta* and *kari channangi* are never sown ; as with rain they are apt to lodge. The soil used for *tripati sanna batta*, *bili channangi*, *kari channangi*, and *pat raj*, is *maralu* or sandy. The others require a clay, which in the low grounds is always black. The red soil is always confined to the rising grounds and is therefore never cultivated for rice, except when it can be watered by machines ; and if the water be more than 31½ feet from the surface, these are never used. Two men and four oxen can, by means of the machine called *kapile*, supply an acre and a half of ground with water sufficient to raise a crop of rice. One set works four or five hours in the morning ; and the other as much in the evening.

The only manner of cultivating rice, that is in use here, is the *mole*, or sprouted-seed ; the manner of preparing which is as follows. The ears must be cut off, the grain beaten out immediately, and then dried in the sun three or four days. It must be preserved in straw or in jars. When wanted for sowing, it must be exposed to the sun for a day, and soaked in water all the following night. It is then put upon a layer of the leaves of the *yekkala*, (*asclepias gigantea*) or of *haralu*, mixed with sheep's dung, and is surrounded by stones, so as to keep it together. It is then covered with *bandári* (*dolonea viscosa*) leaves, and pressed down with a stone. Next morning the upper leaves are removed, and a pot of water is thrown on the seed, which must be turned with the hand, and

then covered again with the leaves and stone. Daily, for three or four times, this operation must be repeated, and then the sprouts from the seed will be almost an inch long.

For the *Kartika* crop, plough seven times in the course of thirty days, the ground all the while being inundated. In the next place manure the ground with leaves, and tread them into the mud. Then let off the water, and sow the seed broad-cast, covering it with a little dung. On the 4th day cover the ground with water, and immediately afterwards let it run off. Repeat this daily, till the eighth time, after which the field must be kept constantly inundated to the depth of one inch for ten days, and four inches for the remainder. The weeding is at the end of the 6th, 10th, and 12th weeks from sowing. The season for ploughing continues all the months of Jészta and Ashádha.

For the *Vaisákha* crop the same process is followed ; but the ploughing season is from the 15th of Asvija till the last of Margasira. By this time the whole seed must be sown ; and the nearer it is done to it the better.

The large grained rices, *dodila batta* which ripens in $4\frac{1}{2}$ months, and *kari chamangi* and *bili chamangi* which ripen in 4 months, require for sowing 8·8 pecks of seed and produce in a good crop 20 fold, in an indifferent crop one-fifth less. *Kembatti* or *dodila kembatti*, and *garuda* or *sanna kembatti* take 8·5 pecks of seed per acre, and yield 23 and 13 fold respectively in a good crop, or 15 and 7 fold in an inferior one. The first ripens in 5 months, the second in four. For the small grained rices, *bili sanna batta*, *kari sanna batta*, *put raj* and *tripati sanna batta*, an acre is sown with 8·14 pecks. The first ripens in 5 months, the second in $5\frac{1}{2}$, the third in 4 and the fourth in $3\frac{1}{2}$. Their respective yield in a good crop is 24, 32, 15 and 17 fold.

In the annexed table will be seen many of the particulars relative to the cultivation of rice in Periyapatna and the west. By far the greatest quantity of rice cultivated here is the *hain* crop of *anaputti*. The following is the manner of cultivating the *hain náti*, or crop of transplanted rice growing in the rainy season. The ground on which the seedlings are to be raised, gets seven or eight ploughings between the middle of Vaisákha and the 10th of Jészta, which are the second and third months after the vernal equinox. In the intervals between the ploughings the field is inundated ; but at each time that operation is performed, the

water is let off. After the last ploughing, manure with the leaves of the

Kinds of rice cultivated.	Months to ripen.	Season.	Seed.		Produce in a good crop.		
			Seers per kaddagi.	Bushels per acre.	Increase fells.	Seers per kaddagi.	Bushels per acre.
Anaputti ...	6	Hain.	140	1.25	30	4,200	37.61
Kembatti ...	6	Do	147	1.31	23	3,500	31.34
Konayali ...	6	Do	154	1.38	18	2,800	25.07
Sanna batta ...	6	Do	119	1.06	21	2,520	22.57
Sanna kembatti...	6	Do	119	1.06	21	2,520	22.57
Karu ...	5	Kár.	...	...	...	2,800	22.07

chanlra mallige (*mirabilis*) or *ummatte* (*datura metel*); but, if these cannot be had, with the leaves of the *chaudangi* (*solanum*). Then tread the leaves in to the mud, sow the seed very thick

and cover it with dung. The seed is in general prepared for sowing by causing it to sprout; and the reason assigned for so doing is, that it is thereby secured from the birds. If the seed has been prepared, or *mole*, the field has water during the third, sixth, and ninth days, the water being allowed to remain on the field all day, and being again let off at night. On the tenth day the field is filled with water an inch deep and is kept so till the eighteenth, when that water is let off. Immediately afterwards the field is filled to three inches deep, and is kept thus inundated until the seedlings be fit for transplantation. If the seed be sown dry, it receives water on the first, second and third days. On the fourth it has the manure which is given to the *mole*, when that is sown. It receives water again on the seventh, which is let off on the ninth. Water is again given on the thirteenth, seventeenth, and twenty first; and the field is then inundated, until the seedlings are fit for transplantation. They must be transplanted between the thirtieth and forty-sixth days.

The ploughings for the fields into which the seedlings are to be transplanted are performed during the time in which these are growing; and are done exactly in the same manner as for the field in which the seed has been sown. Stiff ground requires eight ploughings; in a light soil six are sufficient. The manure is given before the last ploughing. The seedlings are pulled in the evening, and kept in water all night. Next morning the field has the last ploughing, and the mud is smoothed by having a plank drawn over it. The seedlings are then planted, and get no water until the eighth day. On the eighth, twelfth, sixteenth and twentieth days the water is kept on the field, and is let off at night. The yellow colour occasioned by the transplantation is then changed into a

deep green ; after which, until the crop ripens, the field is constantly inundated. In a bad soil, the weeds are removed on the thirtieth day, in a good soil, on the forty-fifth.

The farmers here make their sprouted seed in the following manner. The seed is soaked all night in water, and is then placed in a heap on a piece of sackcloth, or on some leaves of the plantain tree. There it is mixed with some buffalo's dung, and the leaves of the *burike* (*ocimum molle*), and covered with pack saddles. In the evening it is sprinkled with warm water, and covered again. In the morning and evening of the second day it is sprinkled with cold water, and next day it is fit for sowing.

Every kind of rice that is sown in Nagar takes six months to grow ; and they are of less variety than usual, namely, *bili batta* or *heggai*, and *jolaghena*, which may be cultivated both as dry-seed and as transplanted ; and *honasena*, or *kempu*, which can be sown only as dry-seed.

The *bara-batta* cultivation is conducted as follows. In the course of the five months following the winter solstice, the field gets four single ploughings. In the second month after the vernal equinox, it is manured with leaf dung, and ploughed once. After the next rain, the seed is mixed with dry cow-dung, sown broad-cast, and covered by the implement called *koralu*. A month after sowing, when the young rice is about four inches high, the field is turned over with a small plough, to kill the grass and to destroy part of the young corn, which is always sown too thick. After this, the field is again smoothed with the same implement, and harrowed with a bunch of thorns. In the second month after the summer solstice, all the banks are repaired, to retain the water on the fields, which are then ploughed again, and smoothed with the implement called *aligina koralu*. A large rake, called *halaku*, is then drawn by the hand over the field, to remove the weeds. In the month preceding the autumnal equinox, the weeds are removed by the hand. In the two months preceding the shortest day, the crop is ripe. It is cut close by the ground, and for four days is allowed to lie loose on the field. It is then stacked in heaps, with the ears inward, but without having been bound up in sheaves. In the course of three months, it is trampled out by oxen. The grain with the husk is preserved in store-houses, or straw bags, and is only made into rice as it may be wanted for immediate use.

The process for transplanted rice, called here *nitti*, is as follows. In order to raise the seedlings, in the course of fifteen or twenty days

during the month following the vernal equinox, a plot is inundated, and ploughed four times. It is then manured with any kind of fresh leaves, and with the dung made by cattle that have been littered with dried leaves. These are ploughed down, and the mud is smoothed, first with the *noli*, and afterwards by the *mara*, which is a square log of timber yoked in the same manner. The field is then drained so that three inches of water only remain. In any of the three months between the vernal equinox and the summer solstice, the seed is sown broad-cast. As this is the dry season, the seedling plot must be very low, so as to receive a supply of water from some rivalet. On the fifth day after the seed has been sown, the whole water is allowed to drain from the plot; and for three days this is kept dry, after which it is constantly inundated, till the seedlings are fit for transplantation. The field into which they are to be removed, is inundated during the two months following the summer solstice, and in the course of three days during that period ploughed four times. It is then manured, in the same manner as the plot was; and afterwards, in the course of two or three days, it is ploughed again three times. The mud is then smoothed with the *noli*, above mentioned; and the water having been let off to the depth of three inches, the seedlings are transplanted into the field, which must be always kept under water; and a month after it has been planted, the weeds must be removed by the hand. The harvest is in the month preceding the winter solstice.

All the fields are capable of both modes of cultivation. The transplanting is reckoned most troublesome and least productive, and requires most seed. A kandaga of land is an extent, that in the transplanting cultivation requires one kandaga of seed; in dry-seed cultivation, it requires only fifteen kolagas. The produce of all the three kinds of rice is nearly the same, only the *heggai* gives rather most. Of this grain a kandaga of land of the first quality, cultivated by transplanting, produces eleven or twelve kandagas; land of the second quality produces eight kandagas; and land of the third quality produces six kandagas. The same ground, cultivated with dry seed, would produce from half a kandaga to one kandaga more. In other words on a good soil, the acre in the transplanted cultivation requires $\cdot 7$ of a bushel of seed; and in the dry-seed $\cdot 6$ of a bushel. The produce in both cases is 29 bushels. An acre in a poor soil would require $1\cdot 5$ bushel of seed, and would produce $25\cdot 7$ bushels.

The kinds of rice cultivated at Shimoga are *sampige dāla*, *beṭṭa kendaḷa*, *kembatti* and *sanabatti*, producing in a good crop 10, 12 and 9 fold respectively, the last two being equal. All these require six months to grow. They are all large grained, except the *sanabatti*, which sells five per cent higher than the others. The lowest ground is used for the *sanabatti*; the highest for the *kembatti*. The acre would sow 1·5 bushel, and the produce in a favourable season would be 19·2 bushels.

The cultivation of all soils and all kinds of rice is the same, and the unprepared seed is sown by a drill. Immediately after harvest, the ground is once ploughed. When the rains commence during the two months following the vernal equinox, it is ploughed again twice, smoothed with the implement called *koradu*, and then hoed twice with the *heg kunte*, which is drawn by two oxen. This removes the grass; after which the clods are broken by drawing the *koradu* twice over the field, which in some measure serves as a rolling-stone. The dung is then spread; and after the first good rain the seed is sown with the drill or *kūrige*, and covered with the *koradu*. At this season the rain comes in showers, between which are considerable intervals. On the third day after having been sown, the field is hoed with the *heg kunte*, which here is called also *kambulige*. On the twentieth day, when the seedlings are nine inches high, the *koradu* is used again; then the *edde kunte*; then the *koradu*, and finally the harrow, which is made of a bunch of thorny bamboos. On the thirtieth day, more grass having sprung, the *edde kunte* is again used, the rows of young corn passing between the hoes; and this must be repeated as often as the grass springs. In the third month the water is confined, and then for the last time the *edde kunte* must be used. The mud raised by this is smoothed by the *koradu*; but in this operation, the same implement is called *arvasi*. All these weedings are not sufficient, and the remaining grass must be removed by the hand and weeding-iron. The rice is cut with the straw, and for two days is allowed to lie loose on the field. It is then put in ricks, without having been bound in sheaves, and remains there until trodden, which may be done any time in the course of three months. It is always preserved in the husk, and when wanted for consumption is cleaned by a handmill of the usual form, but made entirely of timber, which removes the outer husk; but the inner one, or bran, must be separated by beating in a mortar. Eight measures of

clean rice, as usual in India, are equal in value to twenty of that which retains the husk.

South of the Chitaldroog District, all the rice ground is cultivated as sprouted-seed. The seed is sown equally thick, yet in Budihal the land often produces sixty fold, and the ordinary crop is forty seeds; while towards Garudagiri, the usual produce is twenty seeds. An acre requires 1.16 bushel for seed, and produces here, in an ordinary crop, almost 23½ bushels of rough rice; while in Budihal it produces twice or even three times as much. In the course of one year there are frequently from the same field two crops of rice.

In the annexed table will be seen the kinds of rice cultivated at

Name of rice.	Months to ripen.
Hasude ...	8
Chipiga ...	7
Kesari ...	7
Kumbara kesari ...	7
Bola mallige ...	8
Sanna tatta, bili ...	8
Do kempu ...	7
Modara ...	7
Kirivanna ...	8
Putta batta ...	8

Belur. On *nirāvari* land, or that which has a supply of water from tanks, the rices most commonly cultivated are *kirivanna* and *hasude*. All the three kinds of cultivation are in use; but in ordinary seasons the dry seed is by far the most prevalent. In extraordinary wet seasons a good deal is transplanted, and some is sown sprouted.

The cultivation of the dry seed is conducted as follows. In the month following the winter solstice, the ploughing commences, and in the course of two months the operation is eight times repeated. The little banks, inclosing the plots for confining the water, are then repaired, and the field is manured. In the month preceding the vernal equinox, after a shower of rain, the clods are smoothed with the *ada*, or *gidde mara*, which is the same implement which at Nagar is called *noli*. Eight days afterwards, the field is again ploughed and again smoothed with the *ada*. The seed is sown by the drill, according as the rainy season commences, during the two months and a half which follow the vernal equinox. It is then covered by the *ala*. On the 23rd day after having been sown, the field is hoed with the *elde kunte*, and this is repeated twice, with an interval of four days between each time. The field is then inundated by confining the water, and the *kunte* is drawn a fourth time in the mud. On the day following, the soil is smoothed with the *ada*. Eight days afterwards, the field is drained until the weeds can be removed by the hand. After a month or six weeks, this must be repeated. The rice is cut with the straw, and trodden out by oxen. The produce on a good soil is about 72½ bushels an acre.

When the rains are heavy, a good deal of rice is raised by transplantation. For every kandaga land, 2 kandagas of seed must be sown ; and the produce of this, on the best land, is only 21 or 22 kandagas. Very little sprouted seed is sown ; but it seems to be the cultivation that would answer best. For a kandaga land 15 kolagas of seed are sufficient, and the produce is little less than in the dry seed. On the *malle* land or that which depends entirely on rain for a supply of water, the seed is always sown without preparation, and managed exactly in the same manner as on the *nirávári*. The produce on the best land is 22 kandagas, from 30 kolagas sown on a kandaga field.

Sugar cane.—A considerable quantity of sugar cane is cultivated near Seringapatam. It is of two kinds, *rastáli* and *paṭṭapaṭṭi*.* Both yield *bella* or *jaggory* ; but the natives can extract sugar from the *paṭṭapaṭṭi* alone. The *jaggory* of the latter is also reckoned the best. The *rastáli* can be planted only in Chaitra ; the *paṭṭapaṭṭi* may also be planted in Śrávana or Mágha. The crop of *rastáli* is over in a year ; that of *paṭṭapaṭṭi* requires fourteen months, but may be followed by a second crop, or as is said in the West Indies, by a crop of *ratoons*, which require twelve months only to ripen. The *rastáli* will not survive for a second crop.

When the ground is to be cultivated for sugar cane, it is watered three days, and then for the same length of time it is allowed to dry. During the next eight days it must be ploughed five times, and the clods must be beaten small with a kind of pick-axe, called *kol gudali*. The field must then be manured, and ploughed a sixth time. The ground now rests fifteen days ; after which, in the course of one or two days it must be ploughed twice, and then be allowed eight days more rest. It is afterwards ploughed a ninth time. These operations occupy forty-four days ; six more are employed in planting the cane, which is done by the instrument called *yule gudali*. With this the field is divided into beds of about six cubits wide. These beds are separated by small trenches, which are about fourteen inches wide, and eight deep. In every alternate trench are dug small wells about two feet deep. The water from the canal flows through all the trenches, and, a quantity of it lodging in these wells, is taken out with pots for watering the plants

**Rastáli* is the original sugar cane of the country ; *paṭṭapaṭṭi* was introduced, it is said from Arcot, in the time of Haidar.

by the hand. Across every bed, at the distance of a cubit, are dug five holes, about six inches in diameter and three in depth. In each of these are placed horizontally two cuttings of the cane, each containing three joints. These are covered slightly with earth, over which is laid some dung. When the cane is planted in Chaitra, the trenches must be filled with water from the tank, and every hole must be watered by pots. At the other seasons the trenches are full, it being the rainy weather; but, even then, for one month, the holes containing the canes must daily be watered by the hand. The earth in the holes is then stirred up with a stick, and a little dung is added. Next month the daily watering must be continued, and at the end of it the whole field must be dug up with the *yale gudali*; and round every cluster of young canes there must be formed by the hand a small cavity, into which a little dung is to be put. In the third month the canes must be watered every other day. At the end of the third month, if the canes have grown with luxuriance, the field must be dug over again with the *yale gudali*; but, if they are rather stunted, the watering must be continued all the fourth month, before they get the third weeding. At this time, the earth at the roots of the cane is heaped up into ridges, crossing the beds at right angles to the trenches. Afterwards, no water is given immediately to the plants; but for three days the trenches must be kept full. It is then let out for a week. If there be rain, there is no occasion for more watering; but, if it be dry weather, the trenches, for a month, must be filled with water one day in the week. Then the weeding with the *yale gudali* must be repeated, and the earth must be smoothed with the hand, and placed carefully round the canes. The young shoots from each hole will be now ten or twelve in number; those which are sickly must be cut off; and the healthy, which are about a cubit long, must be tied up with a leaf of the plant into bundles of two or three, in order, to prevent them from spreading too much. Should there be no rain the trenches must once in fifteen days be filled with water, till the canes, having grown higher, again require to be tied together. In a month after the first tying they ought to be two cubits high. When the plants are eight months old they will have grown another cubit, and will require another tying. The farmer now begins to repair his apparatus for making jaggory: the *âle mane*, or boiling-house; the *gâna*, or mill; the *kopparige*, or boiler; the *achchu*, or mould; the *kumu*, or cooler; the *gormane*, or ladle; and the *chibalu*, or skimmer. In the eleventh

month he begins to cut the *rastāli*, and the crop must be finished within the year. The *paṭṭāpaṭṭi* is ripe in twelve months, and two months may be allowed for cutting it.

If it be intended to keep the field of *paṭṭāpaṭṭi* for a second year's crop, the dry leaves which are cut off at crop season must be burned on the spot, and the whole field must be dug with the *yale gūḍali*. The trenches must then be filled with water, and for six months the watering must be continued once in eight or ten days, unless there be rain. The weedings during this time ought to be three; at each of which dung ought to be given. At the end of six months, the canes having grown one cubit high, the weakly plants must be removed, and the strongest tied up, as in the first crop. The manner of conducting the two crops after this is quite similar. The canes of the second crop must be all cut within the year.

The kinds of sugar cane cultivated in Kolar are four, which are esteemed in the following order, 1st *rastāli*, 2nd *paṭṭāpaṭṭi*, 3rd *ma-ra kabṭu*, 4th *kaṭṭe kabṭu*. The two last are very small, seldom exceeding the thickness of the little finger; yet the *kaṭṭe kabṭu* is the one most commonly cultivated. This is owing to its requiring little water; for by means of the *yāla* it may have a supply sufficient to bring it to maturity. From the end of Phālguna to the end of Chaitra (Mar.—April) plough eight or ten times. Manure the field with dung, and plough it again. Then spread leaves on it, and cover them with the plough. By the small channels that are to convey the water, the field is then divided into beds eight cubits broad. Furrows are then drawn across the beds at the distance of nine inches from each other. The cuttings of cane, each containing four or five eyes, are then placed lengthwise in the furrows, the end of the one touching that of the other. They are covered with a very little earth, over which is laid some dung. They are then watered, the water flowing through every channel, and entering every furrow. For one month the watering is repeated once in three days; the earth round the canes must then be loosened with the point of a sharp stick. For fifteen days more the watering must be continued; when the whole field should be hoed, and levelled with the *kōḷ gūḍali*. Four days afterwards, between every second row of sugar cane a trench is dug, and into this the water flows from the channels. Thus in the progress of its cultivation each bed assumes two forms. When there is no rain, the field requires to be watered once in fifteen days. When

four or five months old, the canes are tied up in bundles ; and when they are a cubit and a half high this is repeated. In eleven months they are ripe, and a month and a half are allowed for the crop season. The soil here used for sugar cane is the rich black soil called *ere* ; and after sugar it requires one or two years rest before it gives a good crop of rice. The sugar cane is all made into jaggory ; 74 seers measure, or nearly 18 ale gallons of juice, are said to produce 50 kachcha seers weight (about 26½ lb. avoirdupois) of the jaggory.

The sugar cane field at Madgiri is divided into two equal portions, which are cultivated alternately, one year with sugar cane, and the other with grain ; the cane, however, thrives better when the field, in place of being cultivated for grain, is allowed an intermediate fallow ; but then the loss is heavy, as after cane the grain thrives remarkably. The grains cultivated are rice, *rāgi*, and *jōla* ; the first injures the cane least, and the *jōla* injures it most. The kinds of cane cultivated are the *rastāli* and *mara kabbu*. In *Kārtika* and *Mārgasira* (Oct.—Dec.) plough seven times, and manure with sheep's dung and leaves. Then with the hoe called *yale gulali* form channels at a cubit's distance. In these also, at a cubit's distance, plant single shoots of the cane, each about a cubit in length. If the soil be poor, they must be planted rather nearer. They are laid down in the channels, which are filled with water, and then people tread the shoots into the mud, by walking through each channel. A *kolaga* of land requires 18,000 shoots, on which data it ought to contain 1·5 acre. If the soil be of a moist nature, the cane has water once in eight days ; but, if it dry quickly, it must, until ripe, be watered once in six days, except when there is rain. At the end of the first month the field must be hoed with the *kali lalali*. Near each cane, as a manure, some leaves of the *robinia mitis* are then placed, and they are covered with a little mud ; so that the channels are now between the rows of cane, and the canes grow on the ridges. When these are 2½ cubits high, they are tied up in bunches of three or four ; and as they grow higher, this is three or four times repeated. Twelve months after planting, the crop season begins ; and in six weeks it must be finished : 250 maunds of jaggory is here reckoned a good crop from a *kolaga* of land, which is very nearly 15 cwt. an acre ; 150 maunds, which is about 9 cwt. from the acre, is reckoned a bad crop. Black clay gives the greatest quantity of jaggory, but it is of a bad quality. A sandy soil produces least jaggory, but that of a high value. One *kayle* can water an acre and a half of sugar cane land.

The ground for cultivating sugar cane in Sira is also divided into two equal parts, which are alternately cultivated; one year with cane, and the other with rice. It is watered either from the reservoirs, or by the *kzpile*. In the last case, a field of two *kolugas*, or three acres, one half of which is in sugar cane, and the other in rice, requires the constant labour of four men and eight oxen. Day-labourers must also be hired to rebuild the boiling-house, to tie up the cane, and to weed. When the field is watered from a reservoir, one man only is regularly employed; but to plough, to plant, to weed and to tie up the cane, both men and cattle must be hired in addition. Three kinds of cane are here cultivated. The most valued is the *rastali*, which grows best on a black soil in which there is much sand or gravel; a good crop of this, on a *kolaga* land, produces 100 maunds of jaggory; which is about 29½ cwt. on an acre. The next in quality is the *kari kablu*, or black cane. It requires a pure black mould, called *ere bhumi*; and, in a good crop, produces from a *kolaga* land, 60 maunds of jaggory, or from an acre nearly 17½ cwt. The poorest cane is the *mara kablu*, or stick cane. It is cultivated on the same kind of soil with the *rastali*; but produces only half as much jaggory as the *kari kablu*, and that of a very bad quality, for it is quite black.

The cultivation of the *rastali*, however, is comparatively much more troublesome. In the course of the eight months following the summer solstice, the field must be ploughed eleven times; and once a month, during the whole of that time, 1,000 sheep must be folded for one night on the field. It is then manured with mud from the bottoms of the reservoirs, and ploughed again twice. The channels are then formed, and in them the cuttings are laid down, two and two being always placed parallel. A *kolaga* of land requires 50,000. The channels are then filled with water, and the cuttings are trodden into the mud with the feet. The second watering is on the 4th day, the third watering on the 12th; afterward, the field, if the soil be good, must be watered once a fortnight; or once a week, if it part with its moisture quickly. On the 20th day the field is weeded with the small hoe called *molu potu*, which implies that the operation is done very superficially. On the 35th day the whole field is dug with the large hoe called *yale gudali*; and, the earth being thrown up toward the canes in ridges, the channels for conveying the water run between the rows. About the 90th day the canes are tied up with a leaf of the plant in parcels of five or six, and once a

month this is repeated. When the cane is ten months old, the crop begins, and in thirty days it must be finished.

Towards Periyapatna, the cane is watered from reservoirs ; the natural moisture of the climate not being sufficient to raise it, and machinery being never employed. The kinds cultivated, besides a little pattápatti, are rastáli and mara kabbu, both of which grow nearly to the same length, which is in general about six feet. The rastali ripens in twelve months, while eighteen are required to bring forward the mara kabbu; so that as a crop of rice must always intervene between two crops of sugar cane, the rotation of the former occupies two years, while in that of the latter three are consumed.

For the mara kabbu plough twenty times either in Asvija and Kártika, the two months immediately following the autumnal equinox ; or in Kártika and Márgasira, which is of course one month later. The canes are planted in the second or third months after the winter solstice. In order to plant the cane, longitudinal and transverse furrows are drawn throughout the field, distant from each other one cubit and a half ; at every intersection a hole is made, nine inches wide, and of the same depth ; in each hole are laid horizontally two cuttings of cane, each containing three joints ; finally under them is put a little dung, above them an inch of mould. Then water each hole with a pot, from a channel running at the upper end of the field. On the two following days this must be repeated. Until the end of the third month, water every other day. From the third to the sixth month, the field must, once in eight days, be ploughed between the rows of holes ; and at the same time, should there be any want of the usual rain, it must be watered. At the first ploughing a little dung must be given, and at the end of six months the field must be copiously manured. At this time channels are formed winding through among the canes ; so that every row is between two channels. When the rainy season is over, these channels must be filled with water, once in eight days in hot weather, and once a month when it is cool. At the beginning of the eighth month the whole field is hoed, and at the end of two months more this is repeated. The cane here is never tied up.

The sugar-cane cultivated in Nagar is the *mara-kabbu*. The ground fit for it is that which has a supply of water in the dry season. Any soil will do, but a red earth is reckoned the best. In the month preceding the vernal equinox plough four times ; and then throughout

the field, at the distance of one cubit and a half, form with the hoe trenches one cubit wide, and one span deep. Then cover the field with straw, dry grass, and leaves, and burn them to serve as a manure. The soil in the bottom of the trenches is afterwards loosened with a hoe; and a man, with his hand, opens up the loose earth, puts in a little dung, and upon this places horizontally, and parallel to the sides of the trench, cuttings of the cane, each containing four or five joints. These he covers with a little dung and earth. The cuttings are placed in one row in each bed, the end of the one being close to that of another. Once a day, for a month, the canes must be watered with a pot; the young plants are then about a cubit high; and, the earth round them having been previously loosened with a sharp pointed stick, a little dung should be given to their roots. After this, the ridges are thrown down, and the earth is collected toward the rows of young cane, which by this means are placed on ridges, with a trench intervening between every two rows. Until the rains commence, these trenches must every other day be filled with water. In the month preceding the autumnal equinox, in order to prevent them from being eaten by the jackals and bandicoots, the canes are tied up in bundles of from five to ten, and each of these is surrounded by a series of straw rope. In ten months they are fit for cutting, and require no farther trouble. The crop season lasts one month. On the second year a crop of ratoons is taken, in the third year the roots are dug up, and the field is again planted with cane; so that it is never re-invigorated by a succession of crops.

Sugar cane is at Harihar the most considerable irrigated crop. In the intervals between the crops of cane, a crop of rice is taken, should there be a sufficient supply of water; but that is seldom the case, and the intermediate crop is commonly some of the dry grains. The cane may be planted at any time; but there are only three seasons which are usually employed. One lasts during the month before and month after the summer solstice. This is the most productive and most usual season; but the cane requires at this time longer to grow, and more labour, than in the others. The other two seasons are the second month after the autumnal equinox, and the second month after the shortest day. Those crops arrive at maturity within the year.

The kind of cane cultivated is the *mara kalbu*, and the following is the process in the first season. In the second month after the vernal equinox, the field must be watered, and eight days afterwards

it is ploughed once. After another rest of eight days, it must be ploughed again with a deeper furrow, four oxen having been put into the yoke. After another interval of eight days it is ploughed, first lengthwise, and then across, with a team of six oxen. Then, at the distance of three, or three and a half cubits, are drawn over the whole field, furrows which cross each other at right angles. In order to make these furrows wider, a stick is put across the iron of the plough. In the planting season, two cuttings of the cane, each containing two eyes, are laid down in every intersection of the furrows, and are covered slightly with mud. The furrows are then filled with water and this is repeated three times, with an interval of eight days between every two waterings. A little dung is then put into the furrows; and when there happens to be no rain, the waterings once in the eight days are continued for three months. When the canes have been planted forty days, the weeds must be removed with a knife, and the intervals are hoed with the hoe drawn by oxen. This operation is repeated on the 55th, 70th, and 85th days, and the earth is thrown up in ridges toward the canes. In the beginning of the fourth month, the field gets a full watering. Fifteen days afterwards, the intervals are ploughed lengthwise and across; and to each bunch of plants a basket or two of dung is given and ploughed in. The weeds are then destroyed by a hoe drawn by oxen; after which, channels must be formed between the rows; and until the cane ripens, which varies from fourteen to seventeen months, these channels are filled with water once in fifteen days. The crop season lasts from one month to six weeks.

Cardamoms—are propagated entirely by cuttings of the root, and spread in clumps exactly like the plantain tree. In the month following the autumnal equinox, a cluster of from three to five stems, with the roots adhering, are separated from a bunch, and planted in the same row, one between every two areca nut palms, in the spot from whence a plantain tree has been removed. The ground around the cardamom is manured with *nelli* (*emblica*) leaves. In the third year, about the autumnal equinox, it produces fruit. The capsules are gathered as they ripen, and are dried four days on a mat, which during the day is supported by four sticks, and exposed to the sun, but at night is taken into the house. They are then fit for sale. Whenever the whole fruit has been removed, the plants are raised, and, all the superfluous stems and

roots having been separated, they are set again ; but care is taken never to set a plant in the spot from whence it was raised, a change in this respect being considered as necessary. Next year these plants give no fruit, but in the year following yield capsules again, as at first. After transplantation, the old stems die and new ones spring from the roots. Each cluster produces from a quarter to one seer weight of cardamoms, or from $\frac{1}{10}$ to $\frac{6}{10}$ of a pound.

Areca nut.—In the gardens near Channapatna the areca palm requires a rich black soil, and is planted in such places only as produce water on digging a well two cubits deep. There are here two varieties of the areca, the one bearing large and the other small nuts. The produce of both kinds is nearly equal in value and quantity.

The following is the manner of forming an areca nut garden. A plot of ground having been selected for a nursery, is dug to the depth of one cubit. When the seed is ripe, which happens between the middle of January and that of February, trenches must be formed in the nursery, a span broad and a cubit deep. The trenches are half filled up with sand, on the surface of which is placed a row of the ripe nuts. These are again covered with five inches of sand, and two inches of rich black mould, and watered once in three days for four months, at which time they are fit for being transplanted into the garden.

The garden having been fenced with a hedge of *euphorbium tirucalli*, or *jatropha curcas*, is dug to the depth of a cubit at the same time with the nursery and planted with rows of plantain trees at the distance of three cubits. When the young palms are fit for being transplanted the garden must be dug again to the former depth, and two young arecas must be set in one hole between every two plantain trees. When there is no rain they must have water every third day. When the rainy season commences, a trench must be dug between every third row of trees ; that is to say, so as between every trench to form beds each of which contains two rows of the areca. These trenches serve to carry off superfluous water and to bring a supply from the reservoir when wanted. The garden must be dug twice a year to keep it clear of weeds. At the end of three years the original plantain trees are removed, and a row is set in the middle of each bed and kept up ever afterwards in order to preserve a coolness at the roots of the areca. When the areca trees are about five feet high, which requires about five years, they receive no more water than what is given to the plantain trees, which in dry weather

must be watered twice a month. The tree when five years old begins to produce fruit, and lives from thirty to forty years.

Each tree pushes out three or four spadices which from the middle of August until that of November become fit for cutting at different intervals of twenty or thirty days, one after the other. When the nuts have been cut, the skin is removed with an iron knife, and a quantity is put into a pot with some water, in which it must be boiled till the eyes be separated. The nut is then cut into three or four pieces and for three or four days dried on mats exposed to the sun, when it becomes fit for sale. The plantations are interspersed with cocoa nut, lime, jack and other trees, which add to the shade and to the freshness of the soil. Under the trees are cultivated ginger, and various vegetables.

The situation that is reckoned most favourable for areca gardens in Madgiri is a black soil which contains calcareous nodules. It differs from that in which cotton is raised by having the limestone a cubit or two deep; whereas the cotton requires it to be at the surface. The gardens at this place are watered from reservoirs, from canals and from wells by means of the *kayle*.

To make a new garden,—in Sravana, the fifth month after the vernal equinox, plough four times. Then with the hoe called *yale gwali* form the garden into beds six cubits wide. Between every two beds is a raised channel for bringing a supply of water; and in the centre of each bed is a deep channel to carry off what is superfluous. The beds are divided into plots ten or twelve cubits long. Then plant the whole with shoots of the betel vine and for its support sow the seed of the *huluvina*, *agase* and *nugge*. Then surround the whole with a thick hedge and once a day for three months water with a pot. Whenever weeds grow they must be removed; and at each time the betel vines must get some dung. Between every two rows of the vines, in the 4th month, is put a row of young plantain trees. Once in four days afterwards, the water is given from the reservoir or well. In six months the vines must be tied up to the young trees. At the same time, for every *wokkala* land, 3,000 nuts of the areca must be planted near the roots of the vines. When they are three years old a thousand of them will be fit for use, and 800 are required to plant a *wokkala* land, or about an acre and a half. They are planted distant in every direction from each other five cubits. At the same time plant on the inside of the hedge some rows of cocoa nut palms and orange, lime, mango or jack trees. The eight

hundred areca palms, at five cubits distance would only occupy about an acre; but a considerable space is taken up by a walk, and by the rows of fruit trees between them and the hedge.

In nine years from the first formation of the garden the betel vines and most of the trees that supported them are removed. A few of the *agase* and all the plantains are allowed to remain. In the twelfth year the areca palms begin to produce fruit. The remaining *agase* trees, and one-half of the plantains are then removed. After this the garden requires water only once in eight days when there is no rain; and the whole is dug over, and formed like rice ground into proper squares and channels for distributing the water. One year it is manured with dung; in the second with the leaves of the *honge* and *koghi*, and in the third year with mud from the bottom of a reservoir. So long as the garden lasts this succession of manures should, if possible, be continued; and when the palms attain their full growth, which is in the 14th year of the garden, the plantain trees are entirely removed. For 30 years from its arriving at maturity the palm continues vigorous, and for 14 years more gradually declines; during which time a new garden ought to be formed, and then the old trees should be cut, and the ground cultivated with grain, till the second formed garden again begins to decay. In place of those that die, some poor farmers plant new trees, and thus constantly keep up a garden on the same spot; but here this is looked upon as a bad practice.

The crop season lasts two months before, and one after, the autumnal equinox. The nut, after being peeled, is cut into seven or eight pieces, and put up in a heap. Then take one seer of the nut, one seer of *cut terra japonica*, and a hundred leaves of the *piper betel*, beat them together repeatedly with some water, and strain the juice thus obtained into a pot. Take 20 seers of the bark of the *kari jili* and boil it during a whole night in a large pot with 40 seers of water. With this decoction mix the juice expressed from the former materials, and boil again. While it is boiling, put in the areca nut, after it has been cut, until the pot be full. Immediately after, take it out with a ladle, and put in more, till the whole is boiled. In order to be dried, it must be three days exposed on mats to the sun, and is then fit for sale. Forty maunds of dried nut is here reckoned the common produce of a *kolaga* land, which is about $6\frac{1}{3}$ cwt. an acre, or for each tree about 1½ lb.

Near Chiknayakanhalli the areca thrives best in the rich black mould called *ere*, or *krishna bhūmi*. The natives here look upon it as

a matter of indifference, whether or not, on digging a little depth, water may be found in the soil. All that is required is to have a proper supply of water either from the reservoir or by means of machinery.

In the second month after the winter solstice, the nut intended for seed is cut ; and, having been put in a heap, is for eight or ten days kept in the house. A seed bed is then dug to the depth of a foot, and three inches of the mould is removed from the surface, which is then covered with a little dung. On this the nuts are placed with their eyes uppermost, and close to each other. They are then covered with an inch of mould, and for three months are watered every other day. The seedlings are then three or four inches high, and must be transplanted into a fresh bed that is prepared in the same manner : but in this they are placed a cubit distant from each other. Here they grow for three years, receiving water once every other day ; and once a month they are cleaned from weeds and have a little dung.

One year after planting the seed, the ground that is intended for the garden must be dug to the depth of a cubit, and the soil exposed for two months. Young plantain trees are then placed in it at 16 cubits distance from each other, and it is surrounded by a screen of cocoa nut palms, and of jack, lime, and orange trees, which are defended by a hedge of the milk-bush. At the same time seeds of the *agase*, are planted throughout the garden, at the distance of four cubits. When there is no rain the garden must once in fifteen days be watered by channels made for the purpose. In the second month after the summer solstice of the third year, the young arecas are fit for transplanation. Then throughout the garden, at the distance of 16 cubits, and in the middle between every two plantain trees, are formed pits, a cubit deep and a cubit wide. In each of these pits a young areca is put, and it must be carefully raised from the seed-bed with much earth adhering to its roots ; and, after it is placed, the pit must be filled with earth, and then receive a pot of water. The young arecas are then between two and three feet high, and have four or five branches. If there be water in the reservoir, an irrigation once a month is sufficient ; but the *kapile* must be used once in ten days, as the waterings given by it are but scanty. For three years afterwards the whole garden must be completely hoed twice annually. At the one hoeing, for every four arecas, it must have a bullock-load of dung ; and at the other hoeing, every tree must be allowed an ox-load of red soil. The mud of reservoirs is here thought to

be very bad for an areca nut garden. Ever afterwards the garden is hoed completely once a year only, and is then manured with dung and red earth. At the intermediate period of six months, it is hoed near the trees, and has a little dung. At the end of the first three years the *agase* trees are cut. The plantains are always reserved ; but, as the old stems are cut, which is always done in from 12 to 18 months, the young shoots are conducted to a distance from where the parent was originally placed ; and when the garden is twenty years old, in these spots are planted other young arecas, to supply the places of the old ones when they decay. This second set are again supplanted by a third, growing where the first set did, and thus a constant succession is preserved. In a new garden the areca begins to bear fruit in nine years ; but fourteen or fifteen years are required to bring forward those which are planted among old trees. They continue to bear for sixty or seventy years ; but after having been twenty-five or thirty years in perfection they begin to decay.

There are annually two crops of areca nut : one in the second month after the summer solstice, the other in the two months which precede the shortest day. The last crop is superior both in quantity and quality. The nut, on being cut, is skinned in the course of two days, and put into a large pot with as much water as will cover it two inches. It is then boiled for about three-quarters of an hour until a white scum rises. The largest are then cut into eight pieces, and the smallest into two, with the others in proportion to their size. During the four following days they are spread out in the sun to dry, and every night they are gathered in a heap. When the fruit has been allowed to approach too near to maturity, the nut loses its colour ; and a deceit is attempted, by adding a little reddle to the water in which it is boiled. This frequently deceives the consumer, but never the experienced dealer ; and seems to be done purposely to enable him to defraud the unwary.

A garden of 1,000 trees, allowing eight cubits square for each tree, ought to contain rather more than $3\frac{1}{2}$ acres ; but a young garden, containing trees at sixteen cubits, will require $8\frac{1}{2}$ acres. The produce is reckoned from 40 to 60 maunds. The areca tree is never cut till its leaves have turned brown. Its stem has then acquired great hardness, and in building is very useful.

The following process is adopted in Periyapatna to make a new plantation of areca. Take a piece of ground consisting of black mould

on a substratum of lime-stone, with water at no greater depth than 3 cubits, and surround it with a hedge of the *euphorbium tirucalli*, and some rows of young cocoa nut palms. Then, at the distance of twelve cubits, dig rows of pits, two cubits deep and one and a half in diameter. These pits are six cubits distant from the nearest in the same row. In the second month after the vernal equinox, set in these pits young plantain trees, and give them water once ; after which, unless the weather be uncommonly dry, they require no more. Two months afterwards hoe the whole garden and form a channel in the middle between every two rows of plantain trees. The channels are intended to carry off superfluous water, and are a cubit wide and two feet deep. In the month immediately following the winter solstice, hoe the whole garden a second time. In the following month, between every two rows of plantain trees make two rows of holes, at six cubits distance and one cubit wide and deep. Fill each hole half up with fine mould ; and in this place two ripe nuts of the areca, six inches asunder. Once in two days for three months water each hole with a pot. The shoots come up in Vaisákha ; after which they get water once only in five days. The holes must be kept clear of the mud that is brought in by the rain ; and for three years must, on this account, be daily inspected. In the month following the autumnal equinox give a little dung. Ever afterwards the whole garden must be hoed three times a year.

After they are three years old the areca palms must be watered every other day in hot weather ; when it is cool, once in every four or five days, and not at all in the rainy season. The waterings are performed by pouring a pot-full of water to the root of each plant. In the beginning of the seventh year the weakest plant is removed from each hole ; and at each digging, for three years more, every tree must receive manure. After this, for three years, the young palms have neither dung nor water. In the fourteenth year they begin to bear, and in the fifteenth come to perfection, and continue in vigour until their forty-fifth year, when they are cut down. The crop season lasts over Asvīja, Kārtika and Mārgasīra. A good tree gives 857 and an ordinary one 600, nuts. Sixty thousand nuts, when prepared for sale, make a load of between 7 and 8 maunds. One thousand ordinary trees at this rate should procure 75 maunds.

In Nagar the nursery is managed as follows. In the month preceding the vernal equinox the seed is ripe. After having been cut, it is kept

eight days in the house. In the mean time a bed of ground in a shady place is dug, and in this the nuts are placed nine inches from each other, and with their eyes uppermost. They must be covered with a finger breadth of earth. The bed is then covered with dry plantain leaves, and once in eight days is sprinkled with water. In the month preceding the summer solstice, the plantain leaves are removed, and young shoots are found to have come from the nuts. In the second month afterwards, leaves of the *nelli* are spread between the young plants. In the month preceding the vernal equinox, they get a little dung. In the dry season they are watered once in from four to eight days, according to the nature of the soil.

In the month preceding the autumnal equinox of the second year, the young plants are removed into another nursery, where they are planted a cubit distant and manured with *nelli* leaves and dung. This nursery must be kept clear of weeds, manured twice a year and in the dry season should receive water once in eight days. The seedlings remain in it two years, when they are fit for transplantation. When the arecas are three years old, they are removed into the garden, planted close to the drains for letting off the water, and remain there two years, when they are finally placed in the spots where they are to grow. Once in twenty or thirty years only the watering channels are filled up with fresh earth, and then are not allowed water. During that year the garden is kept moist by occasionally filling the drains. The water in these is, however, reckoned very prejudicial, and is never thrown upon the beds. Once in two years the garden is dug near the trees, and manured. The manure is dung, above which are placed the leafy twigs of all kinds of trees. When an areca dies, a new one is planted in its stead ; so that in an old garden there are trees of all ages. When the trees are sixteen years old they are employed to support pepper vines. The extent of a garden of a thousand rated trees is about $18\frac{1}{4}$ acres. Its produce of areca nut weighs $920\frac{1}{2}$ lb., and of pepper 117 lb.

Cocoa nut.—There are four varieties of the cocoa nut ; 1st, red ; 2nd, red mixed with green ; 3rd, light green ; and 4th, dark green. These varieties are permanent ; but, although the red is reckoned somewhat better than the others, they are commonly sold promiscuously. Their produce is nearly the same.

The soil does not answer, in the Bangalore District, unless water can be had on digging into it to the depth of three or four cubits ; and in such situations a light sandy soil is the best. The black clay called *ere* is the next best soil. The worst is the red clay called *kube* ; but with proper cultivation, all the three soils answer tolerably well.

The manner of forming a new cocoa nut garden is as follows : The nuts intended for seed must be allowed to ripen until they fall from the tree ; and must then be dried in the open air for a month without having the husk removed. A plot for a nursery is then dug to the depth of two feet, and the soil is allowed to dry three days. On the *Ugádi* feast (in March) remove one foot of earth from the nursery, and cover the surface of the plot with eight inches of sand. On this, place the nuts close to each other, with the end containing the eye uppermost. Cover them with three inches of sand, and two of earth. If the supply of water be from a well, the plot must once a day be watered ; but, if a more copious supply can be had from a reservoir, one watering in the three days is sufficient. In three months the seedlings are fit for being transplanted. By this time the garden must have been enclosed, and hoed to the depth of two feet. Holes are then dug for the reception of the seedlings, at twenty feet distance from each other in all directions ; for when planted nearer they do not thrive. The holes are two feet deep and a cubit wide. At the bottom is put sand seven inches deep, and on this is placed the nut with the young tree adhering to it. Sand is now put in until it rises two inches above the nut, and then the hole is filled with earth and a little dung. Every day for three years, except when it rains, the young trees must have water.

The cocoa nut palm begins to produce when seven or eight years old, and lives so long that its period of duration cannot readily be ascertained. Young trees, however, produce more fruit, which comes forward at all seasons of the year. A good tree gives annually a hundred nuts. A few are cut green on account of the juice, which is used as drink ; but by far the greater part are allowed to arrive at some degree of maturity, although not to full ripeness ; for then the kernel would become useless.

Cocoa nut palms are planted in Chiknayakanhalli in rows round the areca nut gardens, and also separately in spots that would not answer for the cultivation of this article. The situation for these gardens must be rather low ; but it is not necessary that it

should be under a reservoir ; any place will answer in which water can be had by digging to the depth of two men's stature. The soil which is here reckoned most favourable for the cocoa nut is a red clay mixed with sand. It must be free of lime and saline substances. Other soils, however, are employed ; but black mould is reckoned very bad. The cocoa nuts intended for seed are cut in the second month after the winter solstice. A square pit is then dug, which is sufficiently large to hold them, and is about a cubit in depth. In this, fifteen days after being cut, are placed the seed nuts, with the eyes uppermost, and contiguous to each other ; and then earth is thrown in so as just to cover them, upon which is spread a little dung. In this bed, every second day for six months, the seed must be watered with a pot, and then the young palms are fit for being transplanted. Whenever, during the two months following the vernal equinox, an occasional shower gives an opportunity by softening the soil, the garden must be ploughed five times. All the next month it is allowed to rest. In the month following the summer solstice, the ground must again be ploughed twice ; and next month, at the distance of 48 cubits in every direction, there must be dug pits a cubit wide, and as much deep. In the bottom of each a little dung is put ; and the young plants, having been previously well watered to loosen the soil, are taken up, and one is placed in each pit. The shell still adheres to the young palm, and the pit must be filled with earth so far as to cover the nut. Over this is put a little dung. For three months the young plants must be watered every other day ; afterwards every fourth day, until they are four years old, except when there is rain. Afterwards they require no water.

Every year the garden is cultivated for ragi, uddu, hesaru, or whatever other grain the soil is fitted for, and is well dunged ; and at the same time four ox-loads of red mud are laid on the garden for every tree that it contains, while a little fresh earth is gathered up toward the roots of the palms. The crop of grain is but poor, and injures the palms ; it is always taken, however ; as, in order to keep down the weeds, the ground must at any rate be ploughed ; as the manure must be given ; and as no rent is paid for the grain. On this kind of ground the cocoa nut palm begins to bear in twelve or thirteen years, and continues in perfection about sixty years. It dies altogether after bearing for about a hundred years. They are always allowed to die ; and when they begin to decay a young one is planted near the old one to supply its place.

In this country, wine is never extracted from this palm, for that operation destroys the fruit; and these, when ripe, are considered as the valuable part of the produce. A few green nuts are cut in the hot season, on account of the refreshing juice which they then contain, and to make *coir* rope: but this also is thought to injure the crop. The *coir* made from the ripe nuts is very bad, and their husks are commonly burned for fuel.

The crop begins in the second month after the summer solstice, and continues four months. A bunch is known to be ripe when a nut falls down and it is then cut. Each palm produces from three to six bunches, which ripen successively. A middling palm produces from 60 to 70 nuts. As the nuts are gathered, they are collected in small huts, raised from the ground on posts. When a merchant offers, the rind is removed, at his expense, by a man who fixes an iron rod in the ground and forces its upper end, which is sharp, through the fibres; by which means the whole husk is speedily removed. He then, by a single blow with a crooked knife, breaks the shell without hurting the kernel, which is then fit for sale, and is called *koppari*. A man can daily clean 1,300 nuts. From 20 to 30 per cent of them are found rotten.

Opium.—The poppy is cultivated in the Bangalore and Kolar Districts, both for making opium, and on account of the seed, which is much used in the sweet cakes that are eaten by the higher ranks of the natives. In Asvija (Sep.—Oct.) dig the ground one cubit deep with the *kāl gudali*. In the following month smooth the ground, and divide it into small plots of three cubits square, separated from each other by small banks, like those of rice fields, but neater and lower; and at the same time form channels winding through the plots, so that every one may have a channel running past one of its sides. By this method any quantity of water which the plant requires is very readily conveyed to the whole. When the channels and squares are formed, the garden is dunged and the poppy seed is sown. Over this is sprinkled a little more dung. At every span's length two seeds of the *kusumba* are then planted on the small mounds which separate the squares; or in place of kusumba, radishes are sometimes raised. Water is then given to every square, and once in four days this is repeated. After the plants have acquired strength, no preference is given to any particular time of the day for watering: but while they are very young the morning is preferred.

In six or seven days the poppies will be two inches high ; and then the gardener with a shell removes those that are superfluous, so as to leave them about four inches apart. In twenty days they are about six inches high ; the weeds must then be removed with a small hoe, and a very little dung must be given. In two months and a half the poppy is ready for making opium, and in three months the seed is ripe. It is not injured by extracting the opium ; which operation is performed by the gardeners, who sell the produce to the drug merchant.

Betel vine.—The *betel vine* thrives best in low ground, where it can have a supply of water from a reservoir. If that cannot be had, a place is selected where water can be procured by digging to a small depth. A black soil is required. A betel leaf garden is thus managed in the east. In Chaitra or Vaisákha, trench over the whole ground one cubit deep, and surround it with a mud wall ; immediately within which plant a hedge of the *euphorbium tirucalli*, and of the *arundo tibialis*. When there is not plenty of rain, this must for six months be regularly watered. Then dig the garden, and form it into proper beds, leaving a space of about twenty feet between them and the hedge. From the main channel for conducting the water to the garden, draw others at right angles, and distant 22 cubits. Between every two of these, to drain off the superfluous water, draw others about a cubit wide, and deeper than the former. The garden is thus divided into rows ten cubits in width, having on one side an elevated channel for supplying it with water, and on the other side a deep canal, to carry off what is superfluous. These rows are divided into beds, each also having on one side a channel to supply it with water, and on the other a canal to carry off what is superfluous ; and it is surrounded by a narrow bank, about six inches high, which excludes the water that flows through the channels : within these little banks the divisions of the beds are carefully levelled.

In the centre of each division is then formed a row of small holes, distant from each other one cubit ; and in Pushya (Dec.—Jan.) in every hole are put two cuttings of the betel-leaf vine, each two cubits long. The middle of each cutting is pushed down, and slightly covered with earth ; while the four ends project and form an equal number of young plants, which for the first eighteen months are allowed to climb upon dry sticks that are put in for the purpose. For the first week

after being planted, the shoots must be watered twice a day with pots ; for another week once a day, and until the end of the second month once in three days. A small drill is then made across each division of the beds, and between every two holes in each ; and in these drills are planted rows of the seeds of the *agase*, *nugge* and *varjepu*. The young betel plants must then have some dung, and for four months more must be watered with the pot once in three days. Afterwards, so long as the garden lasts, all the channels must once in four days be filled with water. This keeps the ground sufficiently moist, and water applied immediately to the plants is injurious. The garden ought to be kept clean from weeds by the hand, and once a year, in December, must have dung.

When the plants are a year and a half old they are removed from the sticks ; two cubits of each, next the root, is buried in the earth ; and the remainder, conducted close to the root of one of the young trees, is allowed to support itself on the stem. At the end of two years two cubits more of each plant are buried in the ground ; and ever afterwards this is once a year repeated. At the beginning of the fourth year the cultivator begins to gather the leaves for sale, and for six or seven years continues to obtain a constant supply. Afterwards the plants die, and a new garden must be formed in some other place. In order to give additional coolness to the garden, at its first formation a plantain tree is put at each corner of every bed, and by means of suckers soon forms a cluster. So long as the garden lasts these clusters are preserved. At all times the gardens are very cool and pleasant ; but they are not neatly kept ; and in the space between the hedge and the beds, a great variety of bushes and weeds are allowed to grow.

In the west, the betel vine is grown with the areca palm in the following manner. When the areca plantation is fifteen years old, in the month immediately following the vernal equinox, a hole is dug near every tree, one cubit deep and one and a half in width. After having exposed the earth to the air for a month, return it into the holes and allow it to remain for another month. Then take out a little of the earth, smooth the surface of the pit, and bury in it the ends of five cuttings of the betel-leaf vine, which are placed with their upper extremities sloping toward the palm. Once every two days for a month, water the cuttings, and shade them with leaves. Then remove the leaves and with the point of a sharp stick loosen the earth in the holes. In the first year the waterings must be repeated every day, and the whole must once a month be hoed ; while

at the same time dung is given to every plant. In the second year, the vines are tied up to the palms ; once in two months the garden is hoed and manured ; and it is in the hot season only that the plants are watered. At the end of the second year the vines begin to produce saleable leaves. In the third year and every other year afterwards, so much of the vines next the root as has no leaves, must be buried. Once in six months the garden must be hoed and manured ; and in the hot season the vines must be watered every other day.

The owners of these plantations are annoyed by elephants, monkeys and squirrels ; and, besides, both palms and vine are subject to diseases ; one of which, the *amibe*, in the course of two or three years kills the whole. Except when these causes of destruction occur, the vine continues always to flourish ; but the palm begins to decay at 45 years of age, and is then removed, care being taken not to injure the vine. Near this is made a fresh hole, in which some persons place two nuts for seed, and others plant a young seedling. In order to support the vine during the 15 years which are required to bring forward the new palm, a large branch of the *hárudana*, or *erythrina*, is stuck in the ground, and watered for two or three days ; when it strikes root and supplies the place of an areca.

Coffee.*—The variety of coffee cultivated in Mysore appears to be the true *coffea arabica*, which Rhind informs us was originally introduced into Arabia from Abyssinia. It was introduced into this Province by a person named Baba Budan, who, on his return from a pilgrimage to Mecca, brought a few seeds, which he planted on the range of mountains still bearing his name.†

In the selection of land for coffee cultivation, care must be taken to obtain a tract well sheltered by nature from undue exposure either to the south-west or the east wind, and situated, with a northern, north-eastern or north-western aspect, within the zone that is favoured with as large as possible a share of the March and April showers and yet not visited by too large a share of rain in the south-west monsoon. There is in fact a line or coffee zone in every coffee-producing country, and more especially in Mysore, even a mile beyond which the coffee tree will not exist. The

* Adapted from a memorandum by Mr. Graham Anderson, Bargua Estate, Manjarabad.

† Further particulars of the history of coffee cultivation will be found under Kadur and Hassan Districts in Vol. II.

plant rejoices in a damp, warm temperature, such as is procurable in the west of Mysore at elevations from 2,500 to 3,500 feet above sea level, although the tree will grow under certain circumstances at elevations both below and above these. A good rich loamy soil, of any colour, with a good deposit of vegetable matter on the surface, and not much sheet rock underlying it, is required.

There are five descriptions of land in Mysore, in which coffee has been planted :—the forest termed *kíns* ; heavy ghat forest, termed *male* ; village jungles, termed *uḍuve* ; *kumri*, or land the original timber on which having been cut has been followed by a secondary growth of trees of a smaller type ; and *kaṇave*, or lands covered with hard-wood trees and bamboos. Some of the finest estates have been formed on lands of the first and third classes, which have the decided advantage over all other descriptions, of possessing a rich deposit of decayed vegetable mould that has not been exposed to atmospheric influences, and hence contains an almost inexhaustible store of organic and inorganic constituents available as food for the coffee plant.

The *kíns* are generally situated in mountainous country, intersected by streams of clear water, with rocky or sandy beds. The peculiarity of the ravines through which these streamlets flow is, that the undergrowth is entirely different to that found under similar circumstances in the ghat forests, consisting as it does of a gigantic species of triangular coffee-weed, (called in Canarese *hanal* or *heb-gúrkal*), and other succulent plants, whereas in the latter case basket reeds (termed *warti*) and canes (*betta*) of every description are generally found in a tangled mass. *Uḍuve* is strictly village jungle or forest, sometimes almost entirely surrounded by rice fields. The trees are frequently large and of good descriptions, and the undergrowth is principally small coffee-weed, bamboos and thorns. There are fewer ravines in this kind of land and they are generally smaller and less precipitous, but frequently old excavations, termed *wanigalu*, are met with, which evidently were dug out as approaches to villages formerly situated in the very heart of the forest. *Male* tracts are situated close to the crest of the ghats and generally contain gigantic timber, but can seldom boast of good soil, except in protected situations, the generality of the land having suffered from wash caused by the almost incessant rainfall in the monsoon. The great height of the trees also proves prejudicial to coffee, which is cut to pieces by the drip. The situation being bleak, windy, and exposed

to terrific rainfall, is seldom profitable for coffee cultivation. *Kumri* lands frequently contain magnificent *looking* soil, but a certain amount of virtue has gone out of it by former exposure, and although coffee has been planted and fine estates made on such land, still the operation is always accompanied by a considerable amount of risk, and always by heavy extra expenditure. In *kanave* lands, ravines containing fair average soil and trees are to be met with, and these places are the only portions suitable for coffee. This description of land has the disadvantage of shewing a maximum area of holding with a minimum of space available for cultivation.

Clearing for a plantation consists of removing with the axe and cutting all undergrowth and obstructions, and such trees as are not required. Large trees that have a thick foliage in the hot weather and little or none in the monsoon, are left as shade at regular distances, attention being paid to leave fewer trees on portions with a northern aspect than on those facing the south, all quarters exposed to the wind especially requiring protection. This accomplished, the ground is either cleared by lopping and laying in line to await the process of rotting in the monsoon, or fire is used to facilitate matters. Lines of pegs, generally at 6 x 6 feet, are then laid down, and the land is holed, each hole being generally 1 foot wide by 2 feet deep. This is done to remove all obstacles to the roots of the young plants, and to make a nice loose bed for their reception. Roads are traced to and from convenient points in the property, and these are again intersected by paths to facilitate the general working of the estate.

For *nurseries*, convenient situations, with facilities for irrigation or with river or tank frontage, are selected and entirely cleared of trees, the soil being dug to the depth of 2 feet or more, and every root and stone removed. This is then laid out into beds, generally about four feet wide, separated by paths, and the whole well drained and put in order with the same care as a flower garden. Manure is applied and the beds are then cut up into furrows, at 6 inches apart, into which the seeds are placed, about 1 inch apart. The whole bed is then covered up with dry leaves and watered by hand, care being taken to maintain a uniform state of moisture, which must not be excessive. The seed germinates in six weeks, and from the bean, which is raised on a slender green stem of about 8 inches in height, burst forth two small oval leaves. These two-leaved seedlings are pricked out into beds, at either 4 x 4 or 6 x 6 inches,

and require from 10 to 14 months, with constant attention and watering, to form into good plants, which should have 3 or 4 pairs of small primary branches and be from 1 to 1½ ft. in height.

Planting is performed in the months of June, July and August. The plants being carefully removed from the beds and the roots trimmed, they are planted either with a mamoti or planting staff by a regular gang of experienced men. Great attention is paid to this operation to see that the holes are properly filled in and that the roots are not bent or injured, and lastly that the plants are firmly set in the ground and not hung.

Under favourable circumstances, the plants are ready for *topping* in the second year. A topping staff, duly marked to the proper height, is placed alongside of the young tree, and the top or head and *one* primary branch are removed. Trees are topped at heights varying from 2 feet to 4½, but the medium of 3 feet is generally preferred. This operation has the effect of directing the sap into the primary branches and making them throw out secondary shoots, which come from each eye along the branch. An abundance of vigour has the effect of forcing out a number of shoots under the junction of the upper primaries with the stem, and also from the stem at various places. These are termed suckers, and are all removed by gangs of women and boys. The first crop generally appears in the third year, and consists merely of a few berries on the primary branches, aggregating about one maund per acre. In the 4th year a return of about 1 cwt. per acre may be expected, and it is not until the 7th or 8th year that the planter is rewarded by a full crop, which, even under the most favourable circumstances, rarely exceeds 5 or 6 cwts. per acre.

The crop commences to ripen in October and November. As soon as the cherries are of a fine red colour, they are picked into baskets, and brought to the pulper to be either measured or weighed, and deposited in a vat made for their reception. They are passed through the pulper with a stream of water either the same day or early next morning, and the pulp or outer skin being thus removed, the beans are allowed to ferment for 20 or 24 hours, without water, to facilitate the removal of the saccharine matter which surrounds them. After the mass has been washed and well stamped out in three waters, all light beans and skins being carefully separated, the beans are removed to the draining mats, where they are constantly turned over and allowed to remain for a day or more, or until all water has drained off. They are then spread out

thickly on the drying ground in order to dry slowly. This is an operation requiring constant attention for 6 or 8 days, the whole having to be covered up every evening to protect it from dews. The beans should not be dried too thinly spread, or too suddenly exposed to the full rays of the sun, as they are apt to become bleached and bent. A drying ground protected by large trees is the best, as in that case portions in shade and sun are both available. When the beans are sufficiently dried, they are bagged and despatched to the coast or Bangalore for preparation and shipment.

The yield of an estate that has been well maintained in cultivation may be put down at from $3\frac{1}{2}$ to 4 cwts. per acre. As much as 6 cwts. per acre have been produced off portions, but of course only under the most favourable circumstances, and such is an exception to the general rule. An accurately calculated estimate shews that, in a series of years, the crop is more frequently below $3\frac{1}{2}$ cwts. than above. But the result varies in different places.

C. Liberica is a new species of coffee lately introduced to India. Dr. Hooker describes the plant as being a vigorous growing shrub that produces a larger, finer fruit than the species now under cultivation, the *coffee arabica*. He also supposes the species to be a hot climate one, and if such is the case we may hope that a material advantage will be gained by the introduction of a species likely to thrive at a lower elevation than the old shrub. Unfortunately another west African species was erroneously distributed under the name of *C. Liberica*, and, but for timely information regarding the difference between the two species from Colonel Benson, Assistant Commissary General, very serious mistakes might have occurred. Colonel Benson has introduced both species and knows them well.

Among plants of economic value introduced into the country within the last few years, the following are deserving of mention :—

Chinchona.—Two plantations have been formed, one at Kalhatti on the Baba Budans, containing 30,526 trees of different ages ; the other on the Biligiri Rangan hills in Yelandur, extending over 49,000 square yards, and having about 3,000 trees. The only kind cultivated is *C. succirubra*. The more valuable, but less hardy, species of *C. calisaya* and *C. officinalis* have also been tried, but without success. As the object of the cultivation is the production of febrifuge alkaloids, the

bark of trees from both the plantations was submitted to analysis by Mr. Broughton, Quinologist to the Madras Government, who obtained the following result :—

Site of Plantation.	Yield in percentages of dry bark.				
	Total alkaloids.	Quinine.	Chinchonidine and chinchonine.	Pure sulphate of quinine obtained crystallized.	Other sulphates of quinine.
Baba Budans	{ trunk	4.50	.86	3.64	.67
	{ branch	1.48	.42	1.06	.30
Biligiri Rangans		7.50	2.01	5.49	1.09
					4.84

The above analyses shewed that, while as a source of alkaloids the bark of the Baba Budan plantation was of satisfactory quality, it was inferior in yield of total alkaloids to the bark from trees of the same age on the Nilgiris, namely, branch bark 2.28 per cent, trunk bark 6.49 per cent. 'But though the amount of alkaloids is thus less', Mr. Broughton observes, 'than is usual with good India grown bark, it fully equals the yield of ordinary red bark from South America.' In his opinion the advantage of the present elevated site of the plantation might be relinquished in favour of one situated on the lower slopes of the hills, and on the side exposed to the south-west monsoon, in order to obtain the requisite conditions of a better soil and more abundant rainfall.

The bark from the Biligiri Rangan plantation was pronounced of high quality for *C. succirubra* and quite equal to that grown on the Nilgiris.

Vanilla.*—In a climate like that of Bangalore there is no difficulty whatever in cultivating the *vanilla aromatica*, as it grows luxuriantly without artificial assistance, provided that a suitable position is selected for the plantation. The least expensive and perhaps the most favourable site which can be selected for the purpose is an *old* mango tope, because the mango trees in that stage are not too dense in foliage, and are better adapted to produce the checkered shade so essential to the healthy development of the vanilla plants. Like all succulents, this plant detests excessive moisture ; swampy situations should therefore be avoided. A light vegetable soil intermixed with sand is an agreeable compost, and cocoa nut fibre is perhaps the best manure that can be ap-

*From notes furnished by Mr. Cameron, Superintendent of the Lal Bagh.

plied. Ordinary sized cuttings generally produce flowers three years after they are rooted, but large cuttings consisting of four or more nodes will produce flowers two years after they are rooted. The vanilla should be planted round the base of the mango trees, small beds of the soil recommended having been previously prepared, and as the plants grow they should be trained round the stem and along the principal limbs of the trees for their future support.

In South America an indigenous insect fertilises the vanilla flowers accidentally, and thus secures the fruit, but in this country no such insect has yet made its appearance. We must therefore adopt our own means to fecundate the flowers. The process is simple when once acquired. The organs of reproduction (unlike the ordinary state of things) are disposed in a peculiar form, as if to prevent natural fecundation, and until this takes place by artifice, or chance as explained, the beans which comprise the economic product of vanilla will not be obtained.

Cocoa.—The chocolate nut tree, *theobroma cocoa*, is indigenous to South America and the W. Indies, where it has been cultivated for various uses for many generations. The tree is an evergreen, which grows from 16 to 25 feet high. The leaves are entire, smooth, and very glossy in appearance. The flowers, which are diminutive, are borne on the stem and principal limbs of the tree; hence the rare and curious appearance which the capsules present suspended from the bare stem. One tree in the Government Garden has produced fruit during the last two years freely. The peculiarities of its cultivation consist in the application of dense shade, moderate moisture, and decomposed vegetable soil, chiefly. Salt is also an indispensable ingredient in a compost for chocolate trees. A number of young plants are being raised in the gardens for distribution to suitable districts at a future period.

Rhea.—The Rhea plant or China grass of commerce is the *boehmeria nivea*. The fibre produced from the bark of this plant is very strong and delicate, and as shewn in Mr. Watson's report for the Government of India on the preparation and use of Rhea fibre, its value has been fully realised. There are three species of *boehmeria* in the Lal Bagh, and the climate of Mysore seems to facilitate their growth. The young shoots which produce the fibre grow more regular and free under half shade than when fully exposed to the sun's rays.

Ipecacuanha.—There appear to be three plants from which this drug is obtained, namely, *cephaelis ipecacuanha*, *psychotria emetica*, and *Richardsonia scabra*. Of these the produce of the first is in every way superior, and to the cultivation of this species attention is now being directed.

Experiments are also being made with other exotic seeds of various kinds, but their cultivation is not properly established as yet. Among others may be mentioned *Hinganghat*, *Vardah* and *Egyptian cotton*, *Carolina paddy*, *Virginia*, *Havannah* and *Munilla tobacco*, *Queensland maize*, *sorgho*, *Katang bamboo*, *Nepal pepper*, *mahogany*, *nutmeg*, *Guinea grass*, a large kind of *sun-flower* which yields a valuable oil, *oats*, *American potatoes*, &c., &c.



Region of Evergreen Forest



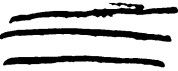
" *Deciduous Forest.*



" *Sandal*



Fuel Plantations.



Tea Tracts.

Gold Tract

FAUNA.

Feræ Naturæ.

Nothing less than a separate treatise, and that a voluminous one, could do justice to the marvellous wealth of the animal kingdom in a province under the tropics marked by so many varied natural features as Mysore. An attempt has been made to present a list of the main representatives,* with the Kannaḍa names, where they could be ascertained. A few notes on the localities frequented by particular animals will be found in Vol. II.

MAMMALS.

Quadrumana.

Simiade—Monkeys—*Kōti*.

<i>Presbytis entellus</i>	... Musya	... The langur, the prototype of Hanuman, the leader of Rama's monkey army, whose image is a common object of worship
<i>Presbytis priantus</i>	...	
<i>Presbytis Johnii</i>	...	... The Malabar langur
<i>Inuus silenus</i>	... Singalika	... The lion monkey
<i>Macacus radiatus</i>	... Kōti, manga, kōlaga	... The common monkey of the country.

Lemuride—Lemurs.

<i>Loris gracilis</i>	... Nala, aḍavi manushya	... A slender nocturnal lemur.
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Cheiroptera.

Frugivorous bats—*Kapa'a*.

<i>Pteropis edwardi</i>	Kichapāl hakki, jōlbāl hakki, togaḷ bāvale, tōle hakki	... The flying fox, common in all parts.
<i>Cynopterus marginatus</i> .		

Insectivorous bats—*Kaṇ-kapa'e, jūba'e*.

<i>Megaderina lyra</i>		... A large-eared vampire, found in caves and old buildings.
<i>Hipposideros speoris</i>		... Inhabits wells and old buildings.
<i>Rhinopoma hardwickii</i>		
<i>Taphozous longimanus</i>		
<i>Scotophilus coronandelianus.</i>	Kaṇ-kapa'e	... The small house-bat.
<i>Nycticejus heathii</i>		
<i>Nycticejus temminckii</i>		
<i>Nycticejus canus</i>		

Insectivora.

Sorecide—Shrews—*Suṇḍ ili*.

<i>Sorex caulescens</i>	... Chund ili, suṇḍ ili	... The musk rat or shrew.
<i>Sorex perroteti</i>	... Mūg-ili	... Pigmy rat or shrew.

* The zoological names of Mammals and Birds are taken from Jerdon's invaluable books, but not the classification, which is however substantially the same.

Carnivora.

Felidae—Cat tribe—*Bekku*.

<i>Felis tigris</i>	... Huli, heb-huli	... The tiger.*
<i>Felis pardus</i>	... Chitta huli, honiga, honva	The panther, commonly called cheeta.
<i>Felis leopardus</i>	... Gerkal	... The leopard, smaller than the above.
<i>Felis melas</i>	...	... The black leopard.
<i>Felis bengalensis</i>	... Huli bekku	... The leopard cat, or tiger cat.
<i>Felis chaus</i>	... Kādu beaku, mant bekku	The wild or jungle cat.
<i>Felis jubata</i>	... Chirite, sivangi	... The hunting leopard, the proper cheeta, found on the east of the Tungabhadra in Shimoga District.

Canidae—Dog tribe—*Nāyi*.

<i>Canis pallipes</i>	... Tola	... The Indian wolf.
<i>Canis aureus</i>	... Nari, kika nari, gulle nari, kuḷḷa nari	... The jackal.
<i>Cuon rutilans</i>	... Shu nāyi	... The wild dog.
<i>Vulpes bengalensis</i>	... Kempu nari, channangi nari, haḷki nari	... The fox.

Hyenidae—Hyenas—*Kiruba*.

<i>Hyena striata</i>	... Kiruba, kotte kiruba	... The striped hyena.
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Viverridae—Civets.

<i>Viverra malaccensis</i>	... Puraḡina bekku	... The civet cat.
<i>Paradoxurus musanga</i>	... Kiri bekku, kablu bekku	The tree cat or toddy cat.
<i>Herpestes erisus</i>	... Munguli, mungasi, kira	The mongoose.
<i>Herpestes fuscus</i>	...	... The brown mongoose.
<i>Herpestes vitticollis</i>	...	... The striped necked mongoose.

Mustelidae—Weasels

<i>Lutra nair</i>	... Nir-nāyi	... Water dog or Indian otter.
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Melidae—Badgers.

<i>Mellivora indica</i>	...	... The Indian badger.
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Ursidae—Bears—*Karāḷi*.

<i>Ursus labiatus</i>	... Karāḷi	... The common black bear, with white horse-shoe mark on the breast.
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Rodentia.

Sciuridae—Squirrels—*Uḍale*.

<i>Sciurus elphinstonei</i>	... Kes-aḷilu, kemp-aḷilu, kent-aḷilu	... The red squirrel.
<i>Sciurus macrourus</i>	...	... The grizzled hill squirrel.
<i>Sciurus palmarum</i>	... Aḷilu, aṇilu, uḍale, chiri-aḷilu	... The common striped squirrel.
<i>Sciurus tristriatus</i>	... Kād-aḷilu	... The jungle striped squirrel.
<i>Pteromys petaurista</i>	... Hāruva beḷḷu	... The brown flying squirrel.

Muridae—Rats and mice—*Iti*.

<i>Gerbillus indicus</i>	... Billa ili	... The jerboa rat.
<i>Nesokia indica</i>	... Kokku	... The mole rat or field rat.
<i>Mus bandicota</i>	... Heggana	... The bantia or rat.
<i>Mus domesticus</i>	... Manu ili	... The brown rat.
<i>Mus brunneus</i>	... Hyāla	... The tree rat.
<i>Mus rufescens</i>	...	...
<i>Mus oleraceus</i>	... Maraḷ ili	... The long-tailed tree mouse.
<i>Mus urbanus</i>	... Ili	... The common Indian mouse.
<i>Leggada platythrix</i>	... Kal ili	... The brown spiny mouse.
<i>Leggada lepida</i>	...	...
<i>Gomunda ellioti</i>	... Gulandi	... The bush rat, the coffee rat.
<i>Gomunda meltada</i>	... Kua ili, tōla	... The soft furred field rat.

* There are said to be two varieties,—the *heb-huli*, or large royal tiger, found in the large jungle; and the *huli*, which is much smaller and is more destructive to human life, frequenting inhabited parts of the country. It has the black stripes closer together over the hind quarters.

Hystriidae—Porcupines—*Mul-handi*

Hystrix leucura ... Eyya, mul-handi ... The porcupine.

Leporidae—Hares—*Mola*

Lepus nigricollis ... Mola ... The black naped hare.

Edentata.

Manis pentadactyla ... Chip handi ... The scaly ant-eater.

Ruminantia.

Cervidae—Deer tribe—*Jinke*

Rusa aristotelis ... Kavalave, kada ... The elk or sambar stag.
Axis maculatus ... Saruga, saru ... The spotted deer.
Axis porcinus ... Karaka ... The hog deer.
Cervulus aureus ... Kan-kuri ... The barking deer or jungle sheep.

Moschidae.

Meminna indica ... Hulle ... The mouse deer.

Antelopidae—Antelopes—*Chigari*

Portax pictus ... Maravi ... The nilgai.
Tetracerus quadricornis ... Koni guri ... The four-horned antelope.
Antelope bezoartica ... Chigari, chigiri ... The antelope.
Gazella bennettii ... Budari, mudari, tiska ... The gazelle.

Bovidae—Ox tribe—*Fettu, basava*

Gaurus gaurus ... Kál kóna ... The wild buffalo or bison.

Pachydermata or Ungulata.

Elephantidae—Elephants—*A'ne*

Elephas indicus ... A'ne ... The elephant, found throughout the Western Ghats and southern hill ranges.

Suidae—Hogs—*Handi*

Sus indicus ... Kál handi ... The wild boar.

The most destructive to life are tigers, and panthers or cheetas. The following figures for the years 1874 and 1875 shew the extent of loss, and what has been done to counteract the ravages of the larger animals, so far as the matter has come under official notice.

In 1874 there were 18 persons killed by tigers, 1 by a panther, 1 by a bear and 6 by other animals; while of cattle 1,401 were killed by tigers, 1,441 by panthers, 778 by wolves, 70 by hyænas and 128 by other animals.

In 1875, 1 person was killed by an elephant, 7 by tigers, 1 by a panther, 2 by bears and 3 by other animals. Of cattle, tigers killed 889, panthers 2,097, wolves 646, hyænas 154 and other animals 211.

The rewards offered for the destruction of wild beasts are ;—

	Nagar Division.	Ashtagram Division.	Nundydroog Division.
For a tiger	Rs. 60	50	35
„ panther	40	25	20
„ hyæna or wolf	10	...	...

In 1874 the sums paid on this account were Rs. 3,545 for 68 tigers, Rs. 4,791 for 170 panthers, Rs. 80 for 8 wolves, Rs. 50 for 5 hyenas, Rs. 10 for 64 other animals.

In 1875 the items were Rs. 4,050 for 100 tigers, Rs. 3,725 for 148 panthers, Rs. 16 for 2 wolves, Rs. 88 for 10 hyenas, Rs. 138 for 880 other animals, which included 457 mangy dogs and 435 bitches, paid for at 2 and 3 annas a head.

Elephants are too valuable to be destroyed, and a special license is now required to kill one, which is only permitted when an animal endangers human life or proves destructive to the crops. At the same time, a department has been formed for the capture of elephants. Previous to this the animals were sometimes caught in pits. The pits were about 20 feet deep, and covered with a light net work of bamboos, over which was spread a covering of leaves and earth. The earth dug out was carried to some distance. These pits never succeeded during the first year, but in the second year, when they had become overgrown with grass, the elephants were often deceived by them. When an elephant was caught, rubbish was thrown into the pit, which he trod down and gradually formed a path to the top. He was then seized by the tame elephants, without whose aid it would be impossible to secure a full grown wild elephant, and at the same time ropes were thrown over him by the Kurubas. An elephant who was less than 8 months old, when thus snared, could seldom be reared in captivity, and a tusker of any size has never been entrapped.

The following account of the first, and highly successful, operations of the Keddah Department at Hardanhalli, Chamrajnagar taluk, is from the report of Mr. Sanderson, the Superintendent.

The Keddah Department was organized in September 1873, but as the operations were much hurried, the season for elephants (June to Nov.) being nearly over, they were then unsuccessful. During the absence of elephants in the hot weather, two covers (the regular resort of elephants during the rainy season) were prepared for enclosing and preventing the exit of any herds entering them; these covers are about two miles apart, and each of about thirty acres in extent. The first cover, and the one in which the capture has been effected, is a piece of jungle lying between an old irrigation channel and the Honnu-hole (Yelandur) river, and can only be entered at a few points by elephants. Arrangements were made for securing these exits after elephants had entered, and the natural features of the position were further strengthened. The other cover is of a similar description, and has not yet been tried.

The first herd of the season came down the Biligirirangan hills on the 5th May; from the 21st May till the 9th June, they were in the immediate vicinity of the keddah, and on the 10th they were enclosed in the cover. They were kept in this till the 17th, when the small keddah for impounding them was ready. Whilst in the large cover, the elephants never approached the defences, and must have been ignorant of any further obstacle to their exit than the presence of the watchers. The river runs through the cover, and forage was abundant.

The small keddah is a circle of 100 yards diameter, in thick jungle, enclosed by a ditch, 9 at top, 3 at bottom, and 8 feet deep; an entrance of 12 feet was left between two trees, in which a chain-and-log gate was suspended, and arranged so as to be dropped by one blow of an axe. The small keddah was connected with the large cover by two guiding trenches converging to the gate, so that the elephants could not be lost by breaking to the right or left in the drive.

The drive was effected without much trouble on the 17th; but I was obliged to shoot a valuable female with a young calf, as she was savage from the beginning, and finally charged in a path in which there was no possibility of avoiding her, though I delayed firing till she was within a few yards, in the hope she might turn. The whole herd, numbering 53, were enclosed; of these, twelve are tuskers of different sizes, three *mucknas*, (one an immense animal) and the rest females. The calf of the female shot in the cover is a so called albino, about three months old, of a dirty cream-colour, with light blue eyes; it was taken out at once, and was quite tame in two days. The females particularly are a fine lot; there are not many small animals in the herd, and the great proportion of tuskers adds considerably to the value of the catch.

After being pounded in the small keddah the elephants were very quiet, making no attempt either upon the ditch or the gate. Water was turned on from the channel which commands it, and they have been regularly foddered since their capture. By the 18th, 15 tame elephants (10 Commissariat, 5 Palace) were in attendance, and 2 more Commissariat were received from Coimbatore; on the 24th, eight elephants are engaged in the keddah, and the remainder bring fodder for the working elephants and the wild ones.

The securing of the captured ones was commenced on the afternoon of the 18th. The leading tusker of the herd was troublesome at first, and required 4 trained tuskers to keep him in awe, until one of them had a tilting match with him and vanquished him, since which he has been more quiet, and he has now been secured and removed. In eight days we have removed 22 elephants, including all the tuskers, the large *muckna* and some of the largest females. We expect to secure them all within ten days. The captured ones have been removed and secured across the river near the temple, and men appointed to them.

They are quiet and feed well, and I do not apprehend any casualties amongst them. One small elephant, which was sickly, died in the keddah the day after the drive, having probably been injured. There are now 52 alive, and one more, a fine tusker, was captured yesterday morning; he got amongst the elephant lines from the jungle, and was secured after an exciting hunt of two hours in the open.

The total cost of the undertaking up to October 1874, including salaries of Superintendent and establishment, amounted to Rs. 15,545; while the amount actually realized by sale of the elephants captured was Rs. 37,511. Their estimated value was higher, namely Rs. 46,161; but the average rate obtained at public auction, Rs. 834, was adopted as the price all round. Of the number caught, 9 animals died, 9 selected as the best were taken for the Maharaja of Mysore, 10 by the Commissariat Department, 2 calves were given to the Chamrajnagar temple in exchange for a full grown animal; which, and the remainder, consisting of inferior animals, were sold by auction.

BIRDS.

No one who has travelled much over the Province, especially in the wilder and more secluded tracts of country, but must have noted the immense variety and beauty of the feathered tribes. The naturalist and the sportsman alike will, it is hoped, find every familiar acquaintance included in the following list.

Raptores.—Birds of Prey.

Vulturidae—vultures—*haddu*.

<i>Otogyx calvus</i>	...	...	Black vulture.
<i>Gyp. indicus</i>	...	...	Long-billed brown vulture.
<i>Gyp. bengalensis</i>	...	Rana haddu	Common vulture.
<i>Neophron perenopterus</i>	...	Bili haddu	White scavenger vulture.

Falconidae—falcons—*dége*.

<i>Falco peregrinus</i>	...	Bhaira	...	Peregrine falcon.
<i>Falco peregrinator</i>	...	Dége	...	Royal falcon.
<i>Falco jugger</i>	...	Gidaga, giduga	...	Common falcon.
<i>Hypotriorchis chiequera</i>	...		...	Red-headed merlin.
<i>Tinnunculus alaudarius</i>	...		...	Kestrel
<i>Astur tringatus</i>	...	Kózile dége	...	Crested goshawk.
<i>Micronis badius</i>	...	Jáli dége	...	
<i>Accipiter nisus</i>	...	Kannada dége	...	Sparrow hawk.
<i>Accipiter virgatus</i>	...	Ur-chitlu	...	
<i>Aquila imperialis</i>	...		...	Imperial eagle.
<i>Aquila noxia</i>	...		...	Spotted eagle.
<i>Aquila fulvescens</i>	...		...	Tawny eagle.
<i>Aquila pennata</i>	...	Ale gadda	...	Dwarf eagle.
<i>Neopus malaiensis</i>	...		...	Black eagle.
<i>Nisaetus bonelli</i>	...		...	Crestless hawk-eagle.

<i>Limnaetus cristatellus</i>	... Juttu bhairi	... Crested hawk-eagle.
<i>Circus gallicus</i>	... Malpatar	... Serpent eagle.
<i>Spilornis cheela</i>	... Gumma	... Crested serpent eagle.
<i>Fandion haliaetus</i>	...	... Osprey.
<i>Butes vulgaris</i>	...	... Common buzzard.
<i>Poliornis teesa</i>	...	... White-eyed buzzard.
<i>Circus swainsonii</i>	...	... Pale harrier.
<i>Circus cineraceus</i>	...	
<i>Circus melanoleucos</i>	...	... Pied harrier.
<i>Circus aeruginosus</i>	...	... Marsh harrier.
<i>Haliastur indus</i>	... Garuda	... Brahmani kite.
<i>Milvus govinia</i>	... Haddu, chilla, piguru	... Common kite.
<i>Pernis cristata</i>	... Jén alave	... Crested honey buzzard.
<i>Elanus melanopterus</i>	... Ramalás hakki	... Black-winged kite or jungle tern.

Strigulæ—owls—gúbe, gúge.

<i>Strix javanica</i>	... Handi kira	... Screech owl.
<i>Strix candida</i>	...	... Grass owl.
<i>Syrnium indraneec</i>	...	... Brown wood owl.
<i>Syrnium sinense</i>	...	... Mottled wood owl.
<i>Otus brachyotus</i>	... Guḍla gúbe	... Short-eared owl.
<i>Urua bengalensis</i>	...	... Rock horned owl.
<i>Urua coromanda</i>	...	... Dusky horned owl.
<i>Ketupa ceylonensis</i>	...	... Brown fish owl.
<i>Ephialtes pennatus</i>	... Chittā gúbe	... Indian scops-owl.
<i>Ephialtes lempiji</i>	...	... Large scops-owl.
<i>Athene brama</i>	... Hál hakki	... Spotted owlet.
<i>Athene radiata</i>	...	... Jungle owlet.
<i>Ninox scutellatus</i>	...	... Brown hawk owl.

*Insessores—Perching Birds.**Fissifostres.**Hirundinidæ—swallows*

<i>Hirundo rustica</i>	...	... Common swallow.
<i>Hirundo dominica</i>	...	... House swallow.
<i>Hirundo filifera</i>	...	... Wire-tailed swallow.
<i>Hirundo daurica</i>	...	... Red-rumped swallow.
<i>Cotyle concolor</i>	...	... Dusky crag martin, found on the fort walls of Seringapatam.
<i>Cypselus melba</i>	...	... Alpine swift, abounds on the cliffs at the Gersoppa Falls.
<i>Cypselus affinis</i>	...	... Common swift.
<i>Cypselus batasiensis</i>	...	... Palm swift.
<i>Collocalia nidifica</i>	...	... Edible nest swiftlet.
<i>Dendrochelidon coronatus</i>	...	... Indian crested swift.

Caprimulgulæ—goatsuckers

<i>Caprimulgus indicus</i>	...	... Jungle night-jar.
<i>Caprimulgus asiaticus</i>	...	... Common night-jar.
<i>Caprimulgus monticolus</i>	...	

Trogonidæ.

<i>Harpactes fasciatus</i>	... Kakkarne hakki	... Malabar trogon.
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Meropulæ—bee-eaters

<i>Merops viridis</i>	...	... Common bee-eater.
<i>Merops philippensis</i>	...	... Blue-tailed bee-eater.
<i>Nyctornis athertoni</i>	...	... Blue-necked bee-eater.

Coraciulæ—rollers

<i>Coracias indica</i>	... Goravanka, karasungana hakki, kiki divi	... Indian roller or jay.
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Halcyonidæ—king fishers

<i>Halcyon leucocephalus</i>	...	... Brown-headed kingfisher.
<i>Halcyon fuscus</i>	...	... White-breasted kingfisher.

<i>Alcedo bengalensis</i>	...	...	Common kingfisher.
<i>Ceryle rudis</i>	...	...	Pied kingfisher.
<i>Bucerotidae</i>—hornbills.			
<i>Homraius bicornis</i>	...	Garuda	Great hornbill.
<i>Hydroissa coronata</i>	...	...	Pied hornbill.
<i>Miniceros bicornis</i>	...	...	Common grey hornbill.
<i>Tockus gingaleusis</i>	...	Kaddal lakki	Jungle grey hornbill

Scansores.

***Psittacidae*—parrots—*giñi*.**

<i>Falcornis alexandri</i>	...	...	Alexandrine parakeet.
<i>Falcornis torquatus</i>	...	...	Rose-ringed parakeet.
<i>Falcornis rosea</i>	...	...	Rose-headed parakeet.
<i>Falcornis columbeoides</i>	...	...	Blue-winged parakeet.
<i>Loriculus vernalis</i>	...	...	Lorikeet.

***Picidae*—woodpeckers—*mara-ku'aka*.**

<i>Picus mahrattensis</i>	...	...	Yellow-fronted woodpecker.
<i>Yungipicus hardwickii</i>	...	...	Pigmy woodpecker.
<i>Henicircus caente</i>	...	...	Heart-spotted woodpecker.
<i>Chrysocolaptes sultanicus</i>	...	...	Golden-backed woodpecker.
<i>Chrysocolaptes greeni</i>	...	...	Black-backed woodpecker.
<i>Mulleripicus bodsoni</i>	...	...	Great black woodpecker.
<i>Gecinys striolatus</i>	...	...	Small green woodpecker.
<i>Micropternus gularis</i>	...	...	Barrous woodpecker.
<i>Brachypternus aurantius</i>	...	...	Golden-backed woodpecker
<i>Brachypternus chrysotus</i>	...	...	Three-toed woodpecker.
<i>Chrysotus rubropygialis</i>	...	...	Common wryneck.
<i>Yunx torquilla</i>	...	...	

***Megalaimidae*—barbets.**

<i>Megalaima caniceps</i>	...	Kutur lakki	Common green barbet.
<i>Megalaima viridis</i>	...	...	Small green barbet.
<i>Nanthokena indica</i>	...	...	Crimson-breasted barbet.
<i>Nanthokena malabarica</i>	...	...	Crimson-throated barbet.

***Cuculidae*—cuckoos—*kógile*.**

<i>Cuculus canorus</i>	...	Kógile	Cuckoo.
<i>Cuculus sonneratii</i>	...	...	Banded bay cuckoo.
<i>Hierococyx varius</i>	...	...	Common hawk-cuckoo, rain bird.
<i>Polyphasia niera</i>	...	...	Flinty cuckoo.
<i>Surniculus dercorides</i>	...	...	Fork-tailed cuckoo.
<i>Coccyzus melanoleucos</i>	...	Golla kókile, jálage	Pied-crested cuckoo.
<i>Coccyzus coromandus</i>	...	Kembóta	Red-winged crested cuckoo.
<i>Eudynamis orientalis</i>	...	...	Indian koil.
<i>Zenaidromus viridirostris</i>	...	Vámana kági	Dwarf crow.
<i>Centropus rutipennis</i>	...	Kalli kági	Crow pheasant.
<i>Centropus viridis</i>	...	...	A smaller kind.
<i>Taccocua leschenaultii</i>	...	Kál giñi	Jungle parakeet.

Tenuirostres.

***Nectarinidae*—honey suckers.**

<i>Arachnothera pusilla</i>	...	...	Little spider-hunter.
<i>Leptomena zeylonica</i>	...	...	Amethyst-rumped honey sucker.
<i>Arachnothera asiatica</i>	...	...	Purple honey sucker.
<i>Dicaeum concolor</i>	...	...	Flower pecker.
<i>Piprisoma agile</i>	...	...	Thick-billed flower-pecker.

***Certhiidae*—creepers.**

<i>Sitta castaneiventris</i>	...	...	Chesnut-bellied nut-hatch.
<i>Dendrophila frontalis</i>	...	...	Velvet-fronted blue nut-hatch.

***Upupidae*—hoopoes.**

<i>Upupa epops</i>	...	...	European hoopoe.
<i>Upupa nigripennis</i>	...	...	Indian hoopoe.

Dentirostres.

Laniidae—shrikes—*kukka*?

<i>Lanius lahtora</i>	...	...	Indian grey shrike.
<i>Lanius erythronotus</i>	...	...	Rufous-backed shrike.
<i>Lanius hardwickii</i>	...	...	Bay-backed shrike.
<i>Lanius cristatus</i>	...	...	Brown shrike.
<i>Tephodornis sylvicola</i>	...	...	Malabar wood-shrike.
<i>Tephodornis pondiceriana</i>	...	...	Common wood-shrike.
<i>Hemipus picatus</i>	...	...	Little pied-shrike.
<i>Volvocivora sykesii</i>	...	...	Black-headed cuckoo-shrike.
<i>Volvocivora melaschistos</i>	...	...	Dark-grey cuckoo-shrike.
<i>Graucalus macei</i>	...	...	Large cuckoo shrike.
<i>Pericrocotus flammeus</i>	...	Suli sangam, the male; arsan turadi, the female.	Orange minivet.
<i>Pericrocotus peregrinus</i>	...	...	Small minivet.
<i>Pericrocotus erythropygius</i>	...	...	White-bellied minivet.
<i>Dicrurus macrocerus</i>	...	Bharadvāja	King crow or common drongo shrike.
<i>Dicrurus longicaudatus</i>	...	...	Long-tailed drongo.
<i>Dicrurus caeruleus</i>	...	...	White-bellied drongo.
<i>Chaptalia aenea</i>	...	...	Bronzed drongo.
<i>Edolius malabaricus</i>	...	...	Racket-tailed drongo.
<i>Chibia hottentota</i>	...	...	Hair-crested drongo.
<i>Artamus fuscus</i>	...	...	Ashy swallow-shrike.

Muscicapidae—flycatchers.

<i>Tchitrea paradisi</i>	...	...	Paradise flycatcher.
<i>Myiagra azurea</i>	...	...	Black-naped blue flycatcher.
<i>Leucocerca albofrontata</i>	...	...	White-browed fantail.
<i>Leucocerca pectoralis</i>	...	...	White-spotted fantail.
<i>Cryptolopha cinereocapilla</i>	...	...	Grey-headed flycatcher.
<i>Alseonax latirostris</i>	...	...	Brown flycatcher.
<i>Eumyias melanops</i>	...	...	Verditer flycatcher.
<i>Eumyias albicaudata</i>	...	...	Blue flycatcher.
<i>Cyornis banyumas</i>	...	...	Blue redbreast.
<i>Cyornis pallipes</i>	...	...	White-bellied blue flycatcher.
<i>Erythrosterna leucura</i>	...	...	White-tailed robin flycatcher.

Merulidae—thrushes.

<i>Myiophonus horsfieldii</i>	...	...	Whistling thrush.
<i>Pitta bengalensis</i>	...	...	Yellow-breasted ground-thrush.
<i>Petrocossyphus cyaneus</i>	...	...	Blue rock-thrush.
<i>Orocetes cinclorhynchus</i>	...	...	Blue-headed chat-thrush.
<i>Geocichla cyanotus</i>	...	...	White-winged ground-thrush.
<i>Merula nigripileus</i>	...	...	Black-capped blackbird.
<i>Merula similina</i>	...	...	Nilgiri blackbird.
<i>Pyctorhis sinensis</i>	...	...	Yellow-eyed babbler.
<i>Alcippe poiocephala</i>	...	...	Quaker-thrush.
<i>Alcippe atriceps</i>	...	...	Black-headed wren-babbler.
<i>Dumetia albogularis</i>	...	...	White-throated wren-babbler.
<i>Pellorneum ruficeps</i>	...	...	Spotted wren-babbler.
<i>Pomatorhinus horsfieldii</i>	...	...	Scimitar babbler.
<i>Garrulax doleserti</i>	...	...	Wainad laughing-thrush.
<i>Trochalopteron caebinnans</i>	...	...	Nilgiri laughing-thrush.
<i>Trochalopteron jerdoni</i>	...	...	Banasore laughing-thrush.
<i>Malacocircus griseus</i>	...	...	White-headed babbler.
<i>Malacocircus malakuricus</i>	...	...	Jungle babbler.
<i>Malacocircus malcolmi</i>	...	Gongya	Large grey-babbler.
<i>Layardia subrufa</i>	...	...	Rufous babbler.
<i>Chatarrhea caudata</i>	...	...	Striated bush-babbler.

Brachypodidae—short-legged thrushes.

<i>Hypsipetes nigherriensis</i>	...	...	Nilgiri black bulbul.
<i>Ixos luteolus</i>	...	...	White-browed bush bulbul.
<i>Kelaertia penicillata</i>	...	...	Yellow eared bulbul.
<i>Otocompea jocosu</i>	...	...	Red-whiskered bulbul.
<i>Pycnonotus hamorhous</i>	...	...	Common bulbul.
<i>Phyllornis jerdoni</i>	...	...	Common green bulbul.
<i>Phyllornis malabaricus</i>	...	...	Malabar green bulbul.

<i>Iora zeylonica</i>	...	...	Black headed green bulbul.
<i>Irena puella</i>	...	...	Fairy blue-bird.
<i>Oriolus kundoo</i>	...	...	Indian oriole.
<i>Oriolus chinensis</i>	...	...	Black-naped Indian oriole.
<i>Oriolus ceylonensis</i>	...	...	Southern black-headed oriole.

Sylviidae.

<i>Copsychus saularis</i>	...	...	Magpie-robin.
<i>Cittocincla macroura</i>	...	...	Shama.
<i>Thamnobia fulicata</i>	...	...	Indian black robin.
<i>Pratincola caprata</i>	...	...	White-winged black robin.
<i>Pratincola indica</i>	...	...	Indian bush-chat.
<i>Ruticilla ruiventris</i>	...	...	Indian redbird.
<i>Cyanocitta stelleri</i>	...	...	Indian blue-throat.
<i>Acrocephalus brunneus</i>	...	...	Large reed-warbler.
<i>Acrocephalus agricola</i>	...	...	Paddy-field warbler.
<i>Locustella certhiola</i>	...	...	Lesser reed-warbler.
<i>Orthotomus longicauda</i>	...	Gijga	Indian tailor-bird.
<i>Prinia sibilans</i>	...	...	Dark-ashy wren-warbler.
<i>Prinia holgersoni</i>	...	...	Mahabir wren-warbler.
<i>Cisticola schaniicola</i>	...	...	Rufous grass-warbler.
<i>Cisticola erythrocephala</i>	...	...	Red-headed grass warbler.
<i>Drymoipus inornatus</i>	...	...	Common wren-warbler.
<i>Drymoipus longicaudatus</i>	...	...	Long-tailed wren-warbler.
<i>Drymoipus sylvaticus</i>	...	...	Jungle wren-warbler.
<i>Franklinia buehanani</i>	...	...	Rufous-fronted wren-warbler.
<i>Phylloscopus rama</i>	...	...	Sykes' warbler.
<i>Phylloscopus tristis</i>	...	...	Brown tree-warbler.
<i>Phylloscopus lugubris</i>	...	...	Dull-green tree-warbler.
<i>Phylloscopus nitidus</i>	...	...	Bright-green tree-warbler.
<i>Phylloscopus viridanus</i>	...	...	Greenish tree-warbler.
<i>Phylloscopus affinis</i>	...	...	Tree-warbler.
<i>Reguloides proregulus</i>	...	...	Crowned tree-warbler.
<i>Sylvia curruca</i>	...	...	Lesser white-throat.
<i>Motacilla madraspatana</i>	...	...	Pied wagtail.
<i>Motacilla dukhunensis</i>	...	Kálige bannada hakki	Black-faced wagtail.
<i>Calopteryx sulphurea</i>	...	Khanjari	Grey and yellow wagtail.
<i>Budytes viridis</i>	...	Dasara hakki	Indian field-wagtail.
<i>Budytes citreola</i>	...	...	Yellow-headed wagtail.
<i>Nemorocitta indica</i>	...	...	Black-breasted wagtail.
<i>Pipastes agilis</i>	...	...	Indian tree-pipit.
<i>Corydalla richardi</i>	...	...	Large marsh-pipit.
<i>Corydalla rutula</i>	...	...	Indian titlark.
<i>Agrodroma campestris</i>	...	...	Stone-pipit.

Ampelidae—Chatterers.

<i>Zosterops palpebrosus</i>	...	...	White eyed tit.
<i>Parus cinereus</i>	...	...	Indian grey tit.
<i>Parus nuchalis</i>	...	...	White winged black tit.
<i>Machlolophus jerdoni</i>	...	...	Southern yellow tit.

*Coriostres.**Corvidae*—crows—*kági, káge*

<i>Corvus culminatus</i>	...	Subu káge	...	Carion crow, sometimes called raven.
<i>Corvus splendens</i>	...	Kági, káge	...	Common crow.
<i>Dendrocitta rufa</i>	...	...	...	Common magpie.
<i>Dendrocitta sinensis</i>	...	...	...	...
<i>Dendrocitta leucogastra</i>	...	...	...	Long-tailed magpie.

Sturnidae—starlings.

<i>Acridotheres tristis</i>	...	Goravanka, sárike	...	Myna.
<i>Acridotheres fuscus</i>	...	...	...	...
<i>Temenuchus pagodarum</i>	...	...	...	Black-headed myna.
<i>Temenuchus malabaricus</i>	...	...	...	Grey-headed myna.
<i>Pastor roseus</i>	...	...	...	Rose-coloured starling.
<i>Eulabes religiosa</i>	...	...	...	Hill myna.

Pringillidae—finches.

<i>Ploceus baya</i>	...	...	Weaver bird.
<i>Munia undulata</i>	...	...	Spotted munia.
<i>Munia pectoralis</i>	...	...	Rufous-bellied munia.
<i>Estrela amandava</i>	...	...	Red wax-bill or amaduvad.
<i>Passer indicus</i>	...	Gubbi, gubuchi	House sparrow.
<i>Passer flavirostris</i>	...	...	Yellow-necked sparrow.
<i>Euspiza luteola</i>	...	...	Kei-headed bunting.
<i>Carpodacus erythrinus</i>	...	...	Common rose finch.
<i>Mirafra affinis</i>	...	...	Bush-lark.
<i>Mirafra erythroptera</i>	...	...	Red-winged bush-lark
<i>Mirafra cantillans</i>	...	...	Singing bush-lark
<i>Ammomanes phoenicea</i>	...	...	Rufous-tailed finch-lark.
<i>Pyrrhuloxia sinensis</i>	...	...	Black-bellied finch-lark.
<i>Calandrella brachydactyla</i>	...	...	Social lark.
<i>Spizella monticola</i>	...	...	Small crested lark.
<i>Akodon gulgula</i>	...	Tittibha	Sky lark.
<i>Galerida cristata</i>	...	...	Large crested lark.

Rasores.—Game Birds.*Columbidae*—pigeons—*pāivāla*.

<i>Crocopus chlorogaster</i>	...	Hasurbanna hakki	Green pigeon.
<i>Osmotreron bicincta</i>	...	Bannada hakki	Orange-breasted green pigeon.
<i>Osmotreron malabarica</i>	...	...	Grey-fronted green pigeon.
<i>Carpophaga sylvatica</i>	...	...	Green imperial pigeon.
<i>Carpophaga insignis</i>	...	...	Bronze-backed imperial pigeon.
<i>Palumbus elphinstonei</i>	...	...	Wood pigeon.
<i>Columba intermedia</i>	...	...	Blue rock pigeon; great numbers at Gersoppa Falls.
<i>Turtur meena</i>	...	...	Rufous turtle-dove.
<i>Turtur suratensis</i>	...	...	Spotted dove.
<i>Turtur risoria</i>	...	...	Ring dove.
<i>Turtur humilis</i>	...	...	Red turtle-dove.
<i>Chalcophaps indicus</i>	...	...	Bronze-winged dove.

Pteroclididae—sand-grouse.

<i>Pterocles fasciatus</i>	...	...	Painted sand-grouse.
<i>Pterocles exustus</i>	...	...	Common sand-grouse, (rock pigeon.)

Phasianidae—pheasants.

<i>Pavo cristatus</i>	...	Navilu	Peacock.
<i>Gallus sonneratii</i>	...	Kād kōli, kukkuta, pugu-lakki	Grey jungle fowl.
<i>Gallus padana</i>	...	...	Red spur fowl.
<i>Gallus lagopus</i>	...	Navilu bannada hakki	Painted spur fowl.

Tetraonidae—grouse.

<i>Francolinus pictus</i>	...	Chakōra	Painted partridge.
<i>Ortygornis ponticiana</i>	...	Tittiri	Grey partridge.
<i>Perdix cambayensis</i>	...	...	Jungle bush-quail.
<i>Perdix asiatica</i>	...	Lāva, lāvuga	Rock bush-quail.
<i>Perdix erythrorhynchos</i>	...	Naulurekke bebbakki	Painted bush-quail.
<i>Coturnix communis</i>	...	...	Large grey-quail.
<i>Coturnix coromandelica</i>	...	...	Black breasted quail, (rain quail).

Tinamidae.

<i>Turnix taigorum</i>	...	...	Black breasted bustard-quail.
<i>Turnix dussumieri</i>	...	...	Large button quail.
<i>Turnix sylvatica</i>	...	...	Button quail.

Grallatores.—Wading Birds.*Otididae*—bustards.

<i>Eupodotis edwardsii</i>	...	...	Bustard.
<i>Sypheotides auritus</i>	...	Kap-navilu	Florin.

Cursoridae.

<i>Cursorius coromandelicus</i> ...	...	Courier plover.
<i>Rhinoptilus bitorquatus</i> ...	...	Double banded plover.

Charadriidae—plovers.

<i>Actitis philippensis</i> ...	...	Ringed plover.
<i>Lobivanellus poensis</i> ...	...	Red-wattled lapwing.
<i>Sarcophorus lalotus</i> ...	...	Yellow-wattled lapwing.
<i>Esacus recurvirostris</i> ...	...	Large stone-plover.
<i>Edicnemus crepitans</i> ...	...	Stone plover.

Gruidae—cranes—kakkare.

<i>Anthropoides virgo</i> ...	Karkoncha	...	Demoiselle crane
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Scolopacidae—snipes.

<i>Scolopax rusticola</i> ...	Kál-kóli	...	Woodcock.
<i>Gallinago nemoricola</i> ...	...	...	Wood snipe.
<i>Gallinago scolopacinus</i> ...	...	...	Common snipe.
<i>Gallinago gallinula</i> ...	...	...	Jack snipe.
<i>Rhynchusa bengalensis</i> ...	...	...	Painted snipe.
<i>Limosa azoocephala</i> ...	...	...	Small godwit.
<i>Numenius arquata</i> ...	Konche, krauncha	...	Curlew.
<i>Numenius phaeopus</i> ...	...	...	Whimbrel.
<i>Tringa subarquata</i> ...	...	...	Curlew stint.
<i>Tringa minuta</i> ...	...	...	Little stint.
<i>Actitis glareola</i> ...	...	...	Spotted sandpiper.
<i>Actitis ochropus</i> ...	...	...	Green sandpiper.
<i>Totanus glottis</i> ...	...	...	Greenshanks.
<i>Totanus fuscus</i> ...	...	...	Spotted redshanks.
<i>Totanus calidris</i> ...	...	...	Redshanks.
<i>Himantopus candidus</i> ...	...	...	Stilt.

Pardidae.

<i>Metopidius indicus</i> ...	Tittibhaka, devana hakki	...	Bronze-winged jacana.
<i>Hydrophasianus chirurgus</i> ...	...	...	Pheasant tailed jacana.

Rallidae—rails.

<i>Porphyrio poliocephalus</i> ...	...	...	Purple coot.
<i>Fulica atra</i> ...	...	...	Bald coot.
<i>Gallinula chloropus</i> ...	Nir koli, kukkuta	...	Water hen.
<i>Gallinula phanicura</i> ...	...	...	White-breasted water hen.
<i>Porzana maruetta</i> ...	...	...	Spotted rail.
<i>Porzana pygmaea</i> ...	...	...	Pigmy rail.
<i>Rollus striatus</i> ...	...	...	Blue-breasted rail.

Ciconiidae—storks.

<i>Leptoptilos argala</i> ...	Baka pakshi	...	Adjutant.
<i>Ciconia leucocephala</i> ...	...	...	White-necked stork.

Ardeidae—herons.

<i>Ardea cinerea</i> ...	...	...	Blue heron.
<i>Ardea purpurea</i> ...	...	...	Purple heron.
<i>Herodias alba</i> ...	Bagala	...	Large egret.
<i>Herodias garzetta</i> ...	...	...	Little egret.
<i>Buphus coromandus</i> ...	...	...	Cattle egret.
<i>Ardeola leucoptera</i> ...	...	...	Pond heron, paddy bird.
<i>Butorides javanica</i> ...	...	...	Green heron.
<i>Arletta flavicollis</i> ...	...	...	Black bittern.
<i>Arletta cinnamomea</i> ...	Bakka	...	Chestnut bittern.
<i>Nycticorax griseus</i> ...	...	...	Night heron.

Tantalidae.

<i>Tantalus leucocephalus</i> ...	...	...	Pelican ibis.
<i>Platalea leucorodia</i> ...	...	...	Spoon bill.
<i>Threskiornis melanocephalus</i> ...	Kanka	...	White ibis.
<i>Geronticus capillosus</i> ...	...	...	Black ibis, (king curlew).
<i>Falcinellus igneus</i> ...	...	...	Glossy ibis.

Natatores.—Swimming Birds.

Anatide—ducks—*bītu*.

Phaenicopterus roseus	...	Rāja hamsa	...	Flamingo.
Nettapus coromandelianus	...		...	White goose-teal, (cotton teal).
Dendrocygna awsuree	...		...	Whistling teal.
Casarca rutila	...	Chakkavakki, chakravāka	...	Ruddy shieldrake, (Brahmani duck).
Spatula clypeata	...		...	Shoveller.
Anas pectorrhyncha	...	Varāṭe	...	Spotted-billed duck; very abundant in western Mysore.
Chaulelasmus streperus	...		...	Gadwall.
Dafila acuta	...		...	Pintail duck.
Mareca penelope	...		...	Wigeon.
Querquedula crocea	...		...	Teal.
Querquedula circia	...		...	Blue-winged teal.
Fuligula cristata	...		...	Tufted duck.

Colymbide—divers.

Podiceps philippensis	...	Plava, nīr kōgile	...	Little grebe.
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Laride—gulls.

Sylochelidon caspius	...		...	Large tern.
Gelochelidon anglicus	...		...	Gull-billed tern.
Hydrochelidon indica	...		...	Small marsh tern.
Seena auranita	...		...	Large river tern.
Sterna javanica	...		...	Black-bellied tern.

Pelecanide—pelicans.

Pelecanus philippensis	...		...	Grey pelican.
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Graculide—cormorants.

Graculus javanicus	...	Madgu, nīr kági	...	Little cormorant.
Plotus melanogaster	...		...	Snake bird.

REPTILES.

The reptiles are no doubt inadequately represented in the following list, which has been compiled from Cuvier's *Animal Kingdom*, Fayrer's *Thanatophidia*, and other works.

The loss of life from snake bite may be gathered from the following particulars. In 1874 there were 69 human beings and 76 cattle killed by snake bite; while in 1875 the numbers were 111 and 115 respectively. In the former year Rs. 618 were paid for the destruction of 2,093 snakes and in the latter Rs. 684 for 2,304.

Chelonia—tortoises—*āme*.

Testudinide—land tortoises.

Testudo indica	...	A'me	...	Indian tortoise.
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Loricata—crocodiles—*mosale*.

Gavialis gangeticus	...	}...	They are found in all the rivers, but are not destructive to human life.
Crocodilus porosus	...		
Crocodilus bitorquatus	...		

Sauria—lizards—*halli*.

Chamaeleonide—chameleons.

Chameleo vulgaris	...	Usaralli, úsaravalli	...	Common chameleon.
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Geckotidae—geckos.

<i>Boltalia subkrevis</i>	...	...	Gecko.
<i>Gecko verus</i>	...	...	Double streaked gecko.
<i>Gecko bivittatus</i>	...	...	Sombre gecko.
<i>Amydosauros lugubris</i>	...	...	Angular toed lizard.
<i>Goniodactylus timorensis</i>	...	...	

Iguanidae—iguanas—*ude*.

<i>Iguana tuberculata</i>	...	Udu	...	Common iguana.
<i>Anolis equestris</i>	...	Oti kyáta	...	Blood sucker.
<i>Agama vittata</i>				" "
<i>Agama colonorum</i>				" "

Lacertidae—true lizards—*halli*.

<i>Uvaranus hemidicus</i>	...	...	Shield-marked lizard.
<i>Uvaranus lunatus</i>	...	...	Crescent-marked lizard.
<i>Uvaranus nebulosus</i>	...	...	Mottled lizard.
<i>Monitor gemmatus</i>			
<i>Cabrita leschenaultii</i>			

Ophidia.—snakes—*hávu*.*Colubridae*.

<i>Coluber mucosus</i>	...	...	Whip snake.
<i>Coluber mycterizans</i>	...	...	Green snake.

Boidae—bons.

<i>Python molurus</i>	...	Kal hávu	...	Rock snake.
<i>Chittia fusca</i>	...		...	Python.

Elapidae.

<i>Naia tripudians</i>	...	Nágara hávu	...	Cobra di capello.
<i>Ophiophagus elaps</i>				
<i>Bungarus fasciatus</i>				
<i>Bungarus ceruleus</i>				
<i>Collophis cerasinus</i>				

Viperidae—vipers.

<i>Daboia russellii</i>			
<i>Echis carinata</i>			
<i>Hypnale nepa</i>			

Batrachia.—*Anura*.*Ranidae*—frogs—*kappe*.

<i>Rana temporaria</i>	...	Kappe	...	Common frog.
<i>Hyla</i>	...		...	Tree frog.

Bufonidae—toads.

<i>Uperodon marmoratus</i>			
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FISHES.

The following list has been compiled from a memorandum by Colonel Puckle, and from Dr. Day's book. A number of native names of fish, not identified, will be found under each district in Vol. II.

*Ambassis commersonii**Percidae*—perches.

<i>Gobius giurus</i>	
<i>Eleotris fusca</i>	

Gobiidae.

*Nandida.**Nandus marmoratus**Labyrinthici.**Anabas scandens* ... Climbing perch.*Ophiocephalida.*

<i>Ophiocephalus marulius</i> ...	Havvina maral ...	Painted murl.
<i>Ophiocephalus striatus</i> ...	Kúchina „ ...	Black murl.
<i>Ophiocephalus gachua</i> ...	Mar korava ...	Black dhok.
<i>Ophiocephalus punctatus</i> ...	Beli „ ...	Painted dhok.
<i>Ophiocephalus barca</i> ...	Bili „ ...	White dhok.

Mastacembelida.

<i>Mastacembelus armatus</i> ...	Hávu minu ...	Thorny black eel.
<i>Mastacembelus guntheri</i>		

*Chromides.**Etroplus suratensis*
*Etroplus maculatus**Scomberesocida.*

<i>Belone cancila</i>		
<i>Hemiramplus reynaldi</i> ...	Bedsalu ...	Silver fish.

Pleuronectida.

<i>Notopterus pullanmistus</i> ...	Agala minu ...	Sole.
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Silurida.

<i>Hypselobagrus cavasius</i>		
<i>Hypselobagrus tengara</i> ...	Góralu ...	Brown catfish, the fiddler.
<i>Wallago attu</i>		
<i>Clarias magur</i> ...	Marave ...	Black catfish.
<i>Saccobranchus singio</i> ..	Chélu ...	Yellow catfish, scorpion fish.
<i>Callichrous chekra</i> ...	Báli ...	Lady fish.
<i>Callichrous sp</i> ...	Damalu, bále	

Cyprinida—carp.

<i>Nemacheilus striatus</i>		Banded stone-suck.
<i>Platacanthus agrensis</i>		Stone loach.
<i>Garra jerdoni</i> ...	Pandi pakke ...	Indian trout.
<i>Puntius chrysopoma</i> ...	Gid pakke ...	Carp.
<i>Puntius parrah</i>		
<i>Puntius hamiltonii</i>		
<i>Puntius vittatus</i> ...		Small carp or dace.
<i>Puntius dorsalis</i> ...	Mar pakke ...	Carp.
<i>Puntius carnatiens</i> ...	Giddi kaoli ...	Carp or roach.
<i>Puntius stigma</i> ...	Kacha korava	
<i>Puntius chola</i>		Small carp or dace.
<i>Puntius ticto</i>		Dace.
<i>Puntius puckellii</i>		
<i>Amblypharyngodon</i> ...	Paragu ...	Lead stripe.
<i>Basilus cocea</i>		Banded goldfin.
<i>Paradanio perilampus</i>		
<i>Rasbora malabarica</i> ...	Kol pakke ...	Greenback.
<i>Leomus malabaricus</i> , ...		Bearded greenback.

INSECTS.

Of the countless hosts and varieties of the insect world, no pretension can be made to give anything like a detailed list. The leading families alone are indicated. Of spiders, beetles and the singular mantis tribe,

there is a great profusion ; as also of the gayest butterflies and richest moths. The bee is never domesticated, but large quantities of honey are obtained by jungle tribes from the woods and caves of various parts. White ants swarm in every soil, and their ravages are relentless. On one or two evenings following on the first heavy showers of the monsoon, which have softened the parched and dried up ground, their winged nymphs issue in gauzy clouds to enjoy a brief flight ; and then, losing their wings, which strew the whole surface of the ground, crawl about in the form of maggots, a prey to every bird of the air and every creeping lizard. They are also gathered and cooked for food by the lower orders. The tiny mango-flies or eye flies, which swarm during the hours of sunlight in the mango season, are a well known source of annoyance. To them is attributed a kind of ophthalmia, termed 'sore eyes,' to which children especially are subject ; but whether the flies originate the affection or merely convey the contagious matter from eye to eye is doubtful.

Annelida.

Abranchia	jigane ...	Leeches ...	Abound at the Gersoppa Falls during the wet season.
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Arachnidæ.

Araneide	jādu ...	Spiders ...	Very numerous and of great variety.
Scorpionide	cheju ...	Scorpions ...	There are three species: the large black rock-scorpion, the large red field scorpion and the little red house scorpion. The sting is very rarely fatal, but often causes great pain for a time.
Acaride		Mites	
Sarcoptes scabiei	kajji huḷa ...	Itch acarus ...	This loathsome affection is very common, even among the upper classes of natives.
Ixodide	uṇṇe ...	Ticks	

Insecta.

Myriapoda.

Iulus indus	...	...	Very common.
Scutigera			
Scolopendra	nūrgālu ...	Centipede ...	There are several species, differing in size and colour; the largest is of a greyish-colour with crimson legs; of the smaller kinds, one is black and another of a sandy or ashy colour.

Polydesmus

Parasita.

Pediculus	bēnu ...	Louse ...	Every one must be familiar with the sight of native women removing this unpleasant occupant from one another's hair. The same operation may be constantly witnessed among the common monkeys.
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Suctoria.

Pulex irritans	chikaṭa ...	Common flea	
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Coleoptera

<i>Scarabeus</i>	dumbe	...	Beetles	...	Beetles abound in great profusion, and of much beauty of form and colouring.
<i>Buprestis</i>	hasar dumbe	...	Green beetles	...	The wings are used for the decoration of shippers, &c.
<i>Carabus</i> <i>Copris</i>		...	Dung beetle	...	Very common on every road.

Orthoptera.

<i>Mantis religiosa</i>		...	Praying mantis	..	There are numerous species, of various sizes and colours; some appear to have the power of changing colour like a chameleon.
<i>Phasma</i> <i>Phyllium</i>		...	Animated straw Leaf-like insects		Several of these are of great beauty and curiosity. One is an exact counterpart of the mango leaf.
<i>Gryllus</i>	jille	...	Crickets	...	Very numerous and various. The stridulation of the tree cricket and the mole cricket are at times, in certain localities, almost deafening.
<i>Locusta</i> <i>Acridium</i>	patanga, milite midite, toppu	...	Grasshoppers Locusts	...	These insects are here comparatively harmless.
<i>Blatta</i>	jirle	...	Cockroaches		

Hemiptera.

<i>Scutellera</i> <i>Phoka</i> <i>Cimex</i> Needles <i>Cicula</i> <i>Fulgora</i> <i>Aphis</i>		...	Bug		
	tigani	...			
	minchu hula	...	Firefly	...	These are of great variety and beauty on different kinds of trees.
<i>Coccus</i> C. lacca	aruga	...	Cochineal insect Lac insect		
<i>Kermes</i>		...	Gall insect		

Neuroptera.

<i>Lilellula</i> <i>Ephemera</i> <i>Myrmelcon</i> <i>Termites</i>		...	Dragon fly		
	geddalu	...	Ant lion	...	Very common.
		...	White ants	...	Universal.

Hymenoptera.

<i>Ichneumon</i> <i>Formica</i> <i>Vespa</i> <i>Apis</i> <i>Xylocarpa</i> <i>Bombus</i>		...	Ants	...	Abound in every part in great variety.
	iruve	...	Wasp and hornet		
	kanajala hula	...	Honey bee		
	jenu hula	...	Carpenter bee		
	jirangi	...	Bumble bee		

Lepidoptera.

<i>Papilio</i>	abbe	...	Butterfly	...	A very great variety: the following may be mentioned,— <i>P. astyanax</i> , <i>ideses</i> , <i>idea</i> , <i>leucippe</i> , <i>dane</i> , <i>amaryllis</i> , <i>castalia</i> , <i>nero</i> , <i>i-is</i> , <i>periamder</i> , <i>pindarus</i> , <i>jarbas</i> , <i>wolus</i> and <i>parrhasius</i> .
<i>Sphinx</i> <i>Bombyx mori</i>	nusi reshmi hula	...	Moth		The caterpillar is the silk worm.

Diptera.

<i>Culex</i> <i>Tipula</i>		...	Gnat	...	Daddy longlegs.
	gungaru	...			

Culex	solle	...	Mosquito	...	A well known pest.
Musca	nopa	...	Fly	...	All varieties.
			Mango fly or eye fly		Very numerous at Bangalore in the mango season. It is no bigger than a flea.

Of insects useful to man the most important are the silk-producing worms, the lac and cochineal insects, and bees.

Silkworm.—The fatality which has attended the rearing of silkworms for some years past, and checked an industry that was a source of livelihood to large numbers of Muhammadans, is noticed in Vol. II. ; together with the measures taken to re-establish a healthy race of insects, more especially in connection with the Silk Filature Company at Kengeri, Bangalore District.

Cochineal.—The introduction of the cochineal insect has been proposed as a partial remedy. Regarding it the following extract is taken from a memorandum by Colonel Boddam.

One hundred years ago the Hon'ble Court of Directors attempted to introduce cochineal culture into India, and offered a reward of £2,000 to any one successfully importing it. In 1795 a naval officer secretly imported some cochineal insects from Brazil, which were distributed over India, and cultivation fostered by the Court of Directors. After expending two lakhs of rupees it was discovered that the wrong insect had been got. There are two sorts of cochineal insect,—the *silvestre* or wild one, and the *grana-fina* or domesticated one ; the latter only producing the cochineal of commerce. It unfortunately was the *silvestre* that had been imported, and was not worth the trouble of cultivating. The *grana-fina* has never been successfully imported. From time to time desultory attempts to bring it to India have been made, but I can hear of but one since the invention of Wardian cases, which have done so much to facilitate the transmission of plants from one country to another. Two years ago a young gentleman brought some cochineal insects alive to Bangalore from Kew, but he had no cactus to feed them on and they died. Whether they were the *grana-fina* he did not know. Besides getting the true insect, the proper cactus for its support is necessary ; the common *opuntia ficus indica*, or prickly pear, will not suit the domesticated kind. It must be *opuntia cochinellifera* or *opuntia tuna*. Referring to Kew as to the correct cactus, authorities differed ; there appears great confusion in the botanical nomenclature of the cactus family. After much correspondence this point was settled, and I got the true *cactus cochinellifera*, compared the plants so named growing at the Botanical Gardens in Calcutta, Madras and Bangalore, and found them identical, corresponding with the description of cactus at Teneriffe.

Tusseh silkworm.—The domestication of the tusseh silk worm has also been advocated. The cocoons have been found in the jungles around Nandidroog and Devaráydroog. The following notes on the subject are taken from Captain Coussmaker's reports.

There are four ways in which the Tusseh silk cocoons may be procured, all of which I myself have successfully tried. 1stly.—During the hot weather, when the leaf is off; then the cocoons are easily discernible hanging like berries from the twigs; men might then go into the jungles and collect them. 2ndly.—From June to October the caterpillars are large and commit much ravage on the trees. Their presence then is easily detected by the denuded appearance of the twigs, and by their droppings under the tree (the large caterpillars do not wander at all, but eat steadily along one twig, devouring leaf after leaf); men might then go and collect them all on to one tree, beneath which they themselves might build a hut and live, scaring away birds, squirrels, &c. Both of these methods are practised in the Bengal Presidency. 3rdly.—The moths can be paired when they issue from the cocoons, and the caterpillars reared from the eggs. 4thly.—When the moths issue from the cocoons, the females can be tied up to certain trees and the males liberated there, when, if any of these latter be not in full vigor, wild males may come and pair with the females, which can then be removed.

In hatching out and rearing the caterpillars there is no difficulty; twigs of whatever tree is most convenient to use should be put into earthen pots full of earth and water, the mouths of which should, as recommended by Captain Hutton, be closed with cotton rammed in, to keep the twigs steady and to prevent the caterpillars crawling down into the water and drowning themselves. For the first fifteen days, during which the caterpillars wander about much, the pots should be kept each in a small wooden frame, the opposite sides of which should be covered with mosquito net or fine bamboo chicks, so that the light and air may penetrate freely and the worms not escape. After that time the pots should be put upon shelves or tables with the twigs interlacing so as to form a long hedge, and left uncovered. The caterpillars should be kept there until they change their skins for the last time, when they may be put on to twigs suspended over bamboos hung from the ceiling; and here they will spin their cocoons, which may be gathered every day when the twigs are renewed. In all cases the twigs should be changed every day—those that are old and stripped, thrown away; those that the caterpillars are on, should be put near the fresh twigs, and they will crawl off of their own accord. It is advisable to water them two or three times a day from a watering pot with a very fine rose; give them a gentle shower as it were: this is refreshing both to caterpillars and twigs. I have noticed

that in changing their skins, it sometimes happens that the old skin does not come off freely. I think that a moderate amount of moisture is essential to their well doing. In this way, with the least possible trouble and expense, any amount of these caterpillars can be reared; ordinary precautions being taken to protect them from their numerous enemies, by stopping rat-holes, sweeping away cobwebs, nailing wire netting or bamboo chicks over the windows, which should be kept open by night and day.

I am glad to see that Mr. Massa reports so favourably upon the specimens of tusseh silk cloth. I myself am greatly indebted to Mr. R. S. De Souza, the Jailer at Dharwar, at whose suggestion the twilled variety was wove, and it was through his ready assistance and careful supervision that the specimens were obtained.

Lac insect.—The lac insect is found in several parts, as near the Nandi hills. The tree on which it feeds is the *jíla* (*vatica laccifera*). All the trees are small, not exceeding eight or ten feet in height; and their growth is kept down by the insect and its managers; for this size answers best. The tree, left to itself, grows to a large size and is good timber. For feeding the insect, it thrives very well in a dry barren soil; and is not planted, but allowed to spring up spontaneously as nature directs. In Kártika, or from about the middle of October to the middle of November, the *lac* is ripe. At that time it surrounds almost every small branch of the tree, and destroys almost every leaf. The branches intended for sale are then cut off, spread out on mats, and dried in the shade. A tree or two that are fullest of the insects are preserved to propagate the breed; and of those a small branch is tied to every tree in the month Chaitra, or from about the middle of March to the middle of April; at which time the trees again shoot out young branches and leaves. The *lac* dried on the sticks is sold to the merchants. This is what is called *stick-lac*, which, after the dye has been extracted, is formed into *seed* and *shell-lac*.

Bees.—The bees are of four kinds. That from which most of the honey and wax is procured is called *hej-jínu*. This is a large bee, which builds under projections of the rocks or in caverns. A large nest gives 8 seers of honey=4.85 lb., and 3 seers of wax, 1.82 lb. A small hive gives about one-third of this quantity. The honey is gathered twice a year, in A'sháḥa and Mágħa, or in the month following the summer solstice and the second after that of winter. Some people of the Bedar caste make the collecting of honey and wax a profession, and it is one attended with much danger. Having discovered a hive, some of them

kindle a fire under the rock, and throw on it the leaves of the *cassia fistula* and of the *pulescri*, which emit a smoke so acrid that nothing living can endure it. The bees are forced to retire; and some others of the Bedar, so soon as the smoke subsides, lower down by a rope one of their companions, who with a pole knocks off the nest and is immediately drawn up again; for if he made any delay the bees would return, and their stinging is so violent that it endangers life. In order to fortify him against the sharp points of rocks, and against injury from the rope which passes round his chest, the adventurous Bêda is secured before and behind by several folds of leather.

The bee that produces the next greatest quantity of honey is called the *kaddi* or *chittu jênu*; that is, stick or small honey. This bee is very small, and builds around the branch of a tree a comb of an oblong shape and sharpened at both ends. It is found at all seasons, but is in the greatest perfection at the same time with the other. The honey is of the finest quality; but the whole comb seldom weighs more than two seers, or 1·2 lb. This bee does not sting and is readily driven away by a twig switched round the comb.

The *tufure* is a bee of which the honey is of an excellent quality, but rarely procured; for it generally builds deep in the crevices of rocks where it is totally inaccessible. Sometimes however it is found in hollow trees, and one hive will give from 20 to 25 seers of honey, or about 12 or 15 pounds; but the quantity of wax is in proportion small. This is a large bee; but it very seldom stings those who plunder its hive.

The *toriga* is a very small bee, that seldom stings. It takes possession of the deserted nests of the white ants, which in this country are very numerous in the wastes of red soil such as is usually cultivated for ragi. Of this stiff earth the white ants raise hills resembling the stump of a tree, which are from four to six feet high, very hard, and able long to resist the heaviest rain. These, when deserted, most commonly become the lurking places of snakes; but sometimes give shelter to the *toriga* bee. Its nest is therefore easily accessible; but it is very small, and contains only about a seer of honey and half a seer of wax.

Domestic Animals.

Horses.—The only native breed of horses is, as in most parts of India, an ill-shaped, vicious *taïu*; as a rule not exceeding 12 hands in

height. In spite of the pains which Haidar and Tippu took to improve the Mysore breed by importation, even their far-famed cavalry were as a rule badly mounted. The present Silledar horses, sprung generally from Arab sires and Mahratta dams, are probably fair specimens of the class of animal which supplied the Muhammadan armies. These are extremely weedy and deficient in barrel, but will stand a great deal of work. A few stallions are maintained by Government; but the Silledars generally purchase their horses from private breeders, and their demand is the sole incentive to breeding.

Horned Cattle.—The principal breeds of horned cattle in Mysore are the *Amrit Mahál*, *Mádésvaran Bétta*, the *Kánkánhalli*, and the village cattle. Almost all other cattle seen in the country are importations or crosses between the above mentioned breeds.

The *Amrit Mahál*,* literally Milk Department, is an establishment for the breeding of a race of cattle peculiar to the country of Mysore and famous for its utility for military purposes. The establishment was founded at some time during the Hindu government, with special privileges as regards grazing; but its maintenance for the special purpose of supplying draught cattle for artillery is due to Haidar Ali. He is reported to have introduced a breed of cattle from the Trichinopoly country, by a cross between which and the indigenous breed of Mysore was produced the *Halikar* breed, which is considered the best in the whole establishment. Great doubt exists as to what the breed imported was, but general tradition points to the small Brahmani bulls, which to this day are noted for their endurance and fast trotting powers.

‘It was this establishment’ wrote Sir Mark Cubbon ‘which enabled Haidar Ali to march 100 miles in two days and a half to the relief of Chilambam, and after every defeat to draw off his guns in the face of his enemies; which enabled Tippu Sultan to cross the peninsula in one month for the recovery of Bednur, and to march 63 miles in two days before General Medows; which, in later times, enabled General Pritzler to march 346 miles in 25 days in pursuit of the Peshwa; and which enabled General Campbell, after the failure of his Bengal equipments, to advance upon Ava and bring the war to a favourable termination. It was also this establishment which enabled the Duke of Wellington to execute those movements of unexampled rapidity which are the admiration of every military man, and in consideration of whose services he recommended it to protection

* The particulars are taken from a pamphlet containing the history of the *Amrit Mahál*, compiled from the records of the Department by Captain M. A. Rowlandson, and one on *Hunsur* by Dr. Gilchrist; with corrections by Major McIntyre, the officer now in charge, to whom I am indebted for them.

in a letter addressed at the close of the war to the Commander-in-Chief.' Allusions in the Wellington Despatches shew that the Great Duke often, during the Peninsular War in Spain, regretted that he had not the assistance of the Amrit Mahal cattle.

After the capture of Seringapatam, the Breeding establishment was intrusted to the native government, and the Public Cattle department to an agent; but the inducements which had led Haidar and Tippu to keep up its efficiency were wanting, and by the end of 1813 the cattle had degenerated to such a degree that the management was taken over by the British, and 10,914 head of breeding cattle, the exact number made over to the Raja's government in 1800, received back. A Commissariat officer (Captain Harvey) was placed in charge, with a suitable establishment, and up to the 31st July 1816 the number of cattle had increased to 14,399, exclusive of 900 calves transferred as fit for service. By 1823 the original number had nearly doubled itself, besides supplying for the public service young bullocks equal to one fourth part of the increased establishment. In 1860, from motives of economy, Sir Charles Trevelyan ordered the establishment to be broken up, and the herds to be sold; but the results were to the detriment of the public service. The Amrit Mahal was therefore, with the cordial approval and assistance of the late Maharaja, re-established in December 1867, with 5,935 head of cattle. In 1871 there were 9,800 head of all sizes, exclusive of 1,000 young male cattle in the Training Dépôt. It has been arranged that a certain number of bulls shall be handed over to the Mysore Government annually, which are stationed at various points in the country for the purpose of improving the breed of cattle used by the ryots.

The cattle are divided into 30 herds, containing from 200 to 700 head of cattle each; for the grazing of which, 208 *kávāls* or pasture grounds have been allotted in various parts of the country.* They are divided into hot weather, wet weather and cold weather *kávāls*, according to the seasons of the year during which they are of most use. The hot weather *kávāls* are generally the beds of tanks in which grass springs up during the hot months, and near which there are trees for the purpose of affording shade to the cattle during the heat of the day. These are very valuable *kávāls*, and are reserved as far as possible for the sole use of the Government cattle. The cold and wet weather *kávāls* are those which during those seasons have plenty of grass and water, but which during the hot weather dry up and are of little use to the department; in both the latter descriptions of *kávāls* the ryots' cattle are permitted to graze certain fixed portions, and after the Government cattle have left for their annual visit to

* Though a herd consists of both males and females of various ages, they are not allowed to graze in immediate company, each being divided into 7 lots, called *pāls*, to prevent their injuring one another. The average number of attendants or graziers is one to every 50 head of cattle.

the jungles, the *shervagars* are permitted to sell some part of the grazing, and from the funds thus obtained the *kávalgars* or guards are paid and other expenses met. This privilege ceases at the end of July each year.

The *Amrit Mihal* cattle comprise three varieties, called the Hallikár,* Hāgalvádi and Chitaldroog, from the districts which originally produced them, and may be readily distinguished from every other breed in India by the peculiar shape and beauty of their heads and the symmetry of their form. They seldom attain an extraordinary height, but in proportion to their size are remarkably deep and wide in the chest, long and broad in the back, round in the barrel, well ribbed up and strong in the shoulder and limb.† They are active, fiery, and walk faster than troops; in a word, they seem to constitute a distinct species, and possess the same superiority over other bullocks, in every valuable quality, that thorough breds do over other horses. The cows of this breed are white, but the males have generally an admixture of blue over the fore and hind quarters. There is a fourth variety, of coloured cattle, which are considered inferior to the white in energy and perseverance, though they rather surpass them in size. As the former breed is the most perfect that is known, it would only tend to its deterioration to cross it with any other, and the bulls are accordingly bred in the best herds and individuals, selected from the best specimens, distributed to improve the breeds in the other herds.

A cow of this breed is supposed to give about one pukka seer of milk a day, and the calf could not be deprived of any part of it without being materially injured in its growth. The calves remain with their mothers during the day, but are separated from them at night, and are kept in a fold under charge of the herdsmen until they are three months old, when they begin to graze and get strength. In the cold season, when the herbage is abundant, they are generally weaned, at the age of

*An absurd legend is current among the herdsmen of the department regarding the origin of the *Hallikar*. They state that Haidur Ali, after one of his trips to the south, brought back to the Mysore country a number of cows of the small Brahmani caste. These cows were turned loose into a *kával* (in the Tunkur District) in which there were great numbers of antelope, and a cross between the big black bucks and the small Brahmani cows gave the present Hallikar breed. In support of the story they point to the small spot below the eye, common to antelope and to Hallikar cattle.

†The general characters of a good bullock are a round barrel, stout strong legs and broad forehead. The average height is 48 inches, and 50 inches was about the highest standard. But the average height has very much increased since the re-establishment of the department in 1866. Some of the bullocks now run up to 53½ inches. Of course weight is also a material consideration. The average is about 12 maunds or 43 stone, but no means have been adopted to determine this exactly.

five months ; but such as are brought forth later in the year cannot be separated from their mothers till after the hot weather. After separation, care is taken to conduct them to the richest pastures in the neighbourhood, and they are never supplied with any other food.

Heifers begin to breed between three and a half and four years old, and bring forth six or seven times. Twenty cows are allowed to one bull. The bulls begin to propagate at five years of age and retain their vigor till ten, when they are discarded from the herds. The average annual amount of births is 50 per cent on the number of cows, and the proportion of male and female calves is nearly equal.

The whole of the cattle, bulls, cows and calves subsist entirely on what the pastures afford, and on the stalks of the castor, *baller*, *kulti* and other nourishing plants, which are left on the ground for their use after the harvest in the months of January, February and March. This brings them into excellent condition at the most favourable season for the cows taking the bull. In the dry weather, when a want of forage and water prevails in the open country, the herds are conducted to the south-western jungles, where the natural moisture of the soil, the early showers, and the shelter afforded by the trees are favourable to vegetation. They arrive there in May and return to their pastures in September, when the grass is in great abundance all over Mysore.

The calves are castrated in November, the cold weather being found peculiarly favourable to the success of the operation, and invariably between the age of five and twelve months, as their growth is supposed to be promoted by early castration ; and it is attended with this important advantage that it prevents the cows being impregnated by inferior bulls and consequently prevents the breed from degenerating. They are separated from the herds after four years of age and transferred to the Public Cattle Department when turned of five, perfectly trained and fit for work. They arrive at their full strength at seven and are past their vigor at twelve ; they work till fourteen or fifteen, after which they decline rapidly and generally die at eighteen years of age. The cattle of these herds are kept in their wild state, without shelter of any description ; they are very fiery and cannot be approached by strangers without the protection of the herdsmen. It requires several months to break them in, and the employment is extremely difficult and dangerous.

At the age of three years the catching of bullocks takes place, previous to which they are nearly as wild as the inhabitants of the jungle. The bullocks

are first driven into a large oval enclosure, which they are made to enter with much difficulty. This communicates with a square yard, surrounding an inner enclosure about 20 feet square, which is surrounded with a strong fence made of wooden posts placed close together and about 12 feet high. When they are collected in this, the opening is closed. The trainers then ascend on the top of the fence, and throw a noose round each of the bullock's horns. This done, the end of the rope is passed between posts near the ground, and the animal is drawn close up and secured by people on the outside. The passage is then opened and old trained bullocks admitted. One of the latter is bound by the neck to one of the wild animals, which being done, the rope is loosened, when he immediately endeavours to escape. His trained comrade, however, to whom he is coupled, restrains him, though but partially; accordingly the two leave the enclosure at tolerable speed. The rope by which the untrained bullock was originally noosed is allowed to remain attached to his horns, and when they approach one of the strong posts placed in the immediate vicinity of the enclosure the rope is quickly turned round it, by which the animals are again brought up. The untrained bullock is then well secured by the neck, with as little latitude of motion as possible. There he is kept alone for about two days, until he becomes considerably tamed and worn out with unceasing efforts to escape. The next operation consists in attaching to the animal a couple of blocks of wood so heavy as to be moved with some difficulty, and giving him as much liberty as this admits of. He is then admitted to the company of old trained cattle, and from the twofold effects of example and partial restraint he gradually becomes submissive. The bullocks are now grazed in the vicinity of Hunsur for a further period of three years, being tied up regularly each evening in lines. They are then transferred to the Public Cattle department to undergo final breaking for the public service.

Mádesvaran Betta.—This breed comes from the jungles and hills near Biligirirangan Betta, on the south-eastern frontier of Mysore. They are larger than the Amrit Mahal cattle, but are loosely made and not well ribbed up. They have heavy loose-hanging dewlaps, sloping broad foreheads, and large muzzles. They are very heavy slow animals, but crossed with a Hallikár bull they form excellent cattle for draught and ploughing. Of this cross breed are the cattle mostly used by the large cart owners who carry on trade from towns in the Mysore territory to the Western Coast, Bellary and other places.

Kánkánhalli.—This breed comes from Kánkánhalli, in the south east of Mysore; they are very like the Mádesvaran Betta breed but are generally smaller, though larger than the Amrit Mahal breed. They

have thick horns, broad sloping foreheads, and white, very thick skins. In all other respects the remarks regarding the Mâdesvaran Bêṭṭa breed are applicable to the Kânkânhalli.

The *village cattle* vary very much in size, colour and characteristics ; in some parts very fair cattle may be seen, but as a general rule the village cattle are a stunted inferior race. The cows generally give from half to one seer of milk per diem, though occasionally some may be met which give three seers, but it will generally be found that these have been fed on nutritious food, such as oil-cake, cotton-seed and such like. The bullocks are small, but for their size do a surprising amount of work.

Buffalo.—Of the buffalo, there are three varieties, the *hullu*, the *gaujri* or Gujarat, and the *chokatu* which comes from the country bordering on the river Krishna.

The *hullu* is by far the most common, and is the native breed of the country. The female has a calf every year, and gives milk for seven months. Besides what the calf draws from her, she gives twice a day about a quart of milk. She generally bears from ten to twelve calves, and is very unruly when the keeper attempts to milk her without the calf being present. They will convey a greater weight, either in a cart or on their back, than a common ox ; but walk very slowly, do not endure heat, and cannot easily travel more than seven miles a day.

The two stranger breeds are greatly superior in size to the *hullu* ; but in this country they very soon degenerate. The females breed once in two or three years only, and produce in all about six calves. For two years after each parturition they continue to give a large quantity of milk ; but in the third year their milk begins to diminish ; and it entirely ceases about two months before the time of calving. In this country, besides what the calf is allowed, they give daily from six to eight quarts of milk and require no more food than the common breed, neither do they refuse their milk should the calf be removed or die. The males are entirely reserved for breeding or for carrying loads ; one of them will carry as much as six oxen, and will walk faster.

Sheep.—These are of three varieties, the *Kurubar* or ordinary breed, so called from the caste which rears it : the *Gollar*, which is less common and which owes its name to the same cause : and the *Yelaga*

which is the rarest of the three. White, brown and black colours are found in all three breeds. The Kurubar is a small sheep, with horns curling backwards. Both its flesh and wool are superior to those of the other two varieties. The Gollar is distinguished from the Kurubar by its large size, coarser wool, longer neck and different formation as to the head and jaws. The Yelaga, which is rare, is longer in the leg, and stands higher than the other breeds, but is less bulky and more resembles a goat in structure of the body and limbs. The sheep of this variety are never shorn of their wool, being too coarse for manufacture, and they shed their coats once a year. This is the breed which is used for draught and carriage of children. The Gollar sheep are left out at night at all seasons and in all weathers, and do not appear to suffer from the exposure, while the Kurubars and Yelagas are invariably housed at night. The different breeds are never mixed, chiefly owing to antagonism between the Kurubar and Gollar castes, but even in the absence of enmity between the shepherds it is doubtful whether the two varieties could ever be brought to mix, and it is pretty well established that the Yelaga will not amalgamate with the other two. All sheep have much deteriorated in quality lately, owing to carelessness in breeding and tending, and a Government breeding farm is a desideratum. They are solely dependent on pasturage, being never fed on grain.

Sheep, with the exception of the Yelagas, are shorn twice a year, and fifty fleeces amount to about a maund weight. The wool is all coarse, and is made into rough kambliis. The shepherds usually hand over 100 fleeces to the weaver, who gives them in return a kambli. There was formerly a Government manufactory at Húnsúr, which turned out good blankets made from the wool of the white sheep in the Government farm. This has been abolished.

‘The woolly breed of sheep which exists throughout Mysore, is fairly esteemed,’ says Dr. Shortt, ‘both for its mutton-forming and wool-producing qualities. The rams have large heavy horns, wrinkled and encircled outwards, and their points inwards and forwards. The head is large and heavy-looking, with a prominent Roman nose. The ears are of moderate size and pointed, and the tail short, never exceeding 3 to 4 inches. The ewes are mostly hornless. They are occasionally met with small light horns, seldom exceeding 3 to 4 inches in length. The prevailing colour is from a light to a very dark grey or black. The ram stands twenty-five inches, and the ewe twenty-three inches in height,

The ordinary live weight is from 40 to 60 lbs., but gram-fed wethers attain from 60 to 80 lbs. They have fairly compact carcasses, with good width, prominence and depth of chest; the body is well woolled and rectangularly formed; in picked specimens the counter is full and the shoulder is fairly filled when in condition. The fleece never exceeds 3 to 4 lbs., and the staple averages three to four inches in length. An ordinary sheep fetches from 2 to 3 rupees in the market, fat wethers 7 to 10 rupees each.

This breed furnishes the chief fighting rams of Southern India, for which purpose good picked male rams are sought after by native Rajas, Zamindars and others. They are much petted and pampered, till they grow quite savage; they will butt and also strike with their forefeet; and I have also seen in one or two instances a propensity to bite. They are pitted against each other, and large sums of money staked on the result. In fighting, they run a tilt by first moving backwards some short distance to add force to the impulse of their weight; and frequently in the fight they have their heads or horns broken. These rams, from special selection and good feed, often attain thirty inches in height and over 80 lbs. in weight. Size does not necessarily ensure success in the battle, as I have seen the largest ram of the kind I remember ever having met with, run away after a few tilts from one that was very much smaller. All the breeds of sheep in Southern India are pugnacious and reared to fight, the preference always being given to the black woolly breeds of Mysore or to those of Coimbatore. This breed extends from Mysore to Bellary, where after a time the wool frequently changes into long lank hair.

For many years Sir Mark Cubbon had an experimental sheep farm at Heraganhalli, Nagamangala taluk, under the charge of a European Commissariat subordinate officer. Merino rams were imported yearly from Australia and the cross-breeds distributed all over the country. The breed of sheep throughout the Province was thus immensely improved both as to size, quality of mutton, and wool. The wool was sent in bales by the Mysore Government to England for sale, as well as for the purpose of being manufactured into blankets and serge. The farm was given up in 1863 as it did not pay expenses. This was owing apparently to sheep breeding alone receiving attention: if other branches of farming had been combined, the results would probably have been more favourable.

Goats.—There are two kinds of goats, the long legged or *mêke*, and the short legged or *kanchi mêke*, but the two can propagate together. In every flock of sheep there is commonly a proportion of ten or twenty *mêke* to a hundred sheep. This does not interfere with the pasture of the sheep, for the goats live entirely on the leaves of bushes and trees. One male is kept for twenty females. Of those not wanted for breeding, the shepherd sacrifices some for his own use while they are young; the remainder he castrates and sells to the butcher. The female breeds at two years of age. They breed once a year, about four times, after which they are generally killed by the shepherds for their own use. For three months the kid is allowed the whole milk; afterwards the mother is milked once a day for two months; and eight goats will give a quart of milk. The excrement of both sheep and goats is much used for manure.

Asses.—Every washerman keeps three or four females and a male. The superfluous males are sold to various kinds of petty traders, and people who transport salt and grain. The breed is very small, no pains being taken to improve it; nor indeed to keep it from growing worse. The asses get nothing to eat except what in the intervals of labour they can pick up about the village. When the crop is on the ground they are tied up at night; but at other seasons they are allowed to roam about, and in order to prevent them from wandering too far their fore-feet are tied together. The males are never castrated, and the best are always sold off by the washermen, which are the principal causes of the degeneracy of the breed. At three years of age the females begin to breed, and some have every year a colt, while others breed once only in three years. An ass's burthen is reckoned about 76 lbs; with which they will daily travel about seven miles.

HISTORY.

Legendary Period.

A land covered with one mighty and all-embracing forest,—the great Dandakaranya; nestling here and there on the bank of a sacred stream, the *ásrama* or hermitage of some *rishi* or holy sage with his mind intent upon penance or absorbed in austerities of overwhelming potency; hidden in forest clearings or perched on isolated rocky eminences, the retreats and strongholds of lawless predatory chiefs or still more formidable *asuras* and *rákshasas*, whence they issued for raid and foray or bent on deeds of violence:— such is the picture of the south of India presented to our view in the earliest records of the Hindu race. In the continual conflict between *devas* or gods and Brahmanas on the one side, and *asuras* or giants and *rákshasas* or demons on the other, is doubtless depicted a period when the Aryans in their southward progress were brought into collision with aboriginal races or the descendants of primeval immigrants.

The course of events seems to have been somewhat on this wise. A few solitary vedic rishis made their way as hermits to the south, in search of suitable retreats in the depths of the forest, where the acquisition of merit, by an uninterrupted round of austerities and rites, might gratify the spiritual pretensions which were contested among the haunts of men as at variance with the established system of society. But here too they found not unpeopled solitudes; and as intruders of a different race, provoked the hostility of previous settlers, which took the form of interference with the sacrifices and molestation of the rites—the proclaimed sources of supernatural power,—whose efficacy depended on exact and complete performance. The superior attainments, however, of the Aryan Brahmanas enabled them in various ways to defeat the opposition of the tribes with whom they were thus brought into contact, and to introduce the elements of civilization among the ruder races of the south.

Impelled by internal strife or by ideas of adventure and conquest, warriors of the Kshatriya class gradually followed these Brahman pioneers across the Vindhya, and came into collision with the rulers of indigenous tribes. The Brahmins, having already gained a footing among these, would be led to assert sacerdotal claims with increased and uncompromising vehemence, whence violent struggles ensued, not alone between hostile races, but between rival sects and factions, marked by all the asperity and implacable rancour of such contests. The power of the Kshatriyas is represented as having been virtually extinguished, and only resuscitated with the aid of the Brahmins and the admission of their ascendancy. But the rival system of Buddhism, which was of Kshatriya origin, became in course of time predominant; and so continued for some centuries, until the gradual revival of Brahmanical influence ended in the banishment of the former from the land of its birth to the congenial soils where it still holds sway over the greater proportion of the human race.

But the records which have come down to us of these revolutions and mutations require to be used with discrimination. For the Brahmins, being last in the ascendant, have, apparently, by interpolations in old works, by the argument of more recent compositions and by the systematic destruction of Buddhist and Jain literature and remains of the intermediate period, persistently striven, not only to ascribe almost every public benefit to the initiation or interposition of Brahmins and every public calamity to the neglect of their injunctions, but have even assigned a Brahmanical origin to the royal lines. Notwithstanding, therefore, evident anachronisms, and the prolongation of the lives of sages for several centuries, implied in their appearance at widely distant periods, the ancient literature, with steady uniformity, represents Brahmins and their blessings as the most potent source of honour and power, their imprecation as ensuring the most inevitable doom; while, until the brilliant discoveries of Prinsep, the history of the Buddhist period was almost a blank. Modern research has done, and is still doing, much to throw light on the real progress of events and development of principles which have resulted in the formation of the India of to-day.

Agastya.—Of the rishis who in the earliest times penetrated to the south, Agastya is one of the most conspicuous. The tradition that he caused the Vindhya mountains to bow down and yield him a passage, no less than the universal popular belief, seem to point him out as the

forerunner of the last Aryan migration into the peninsula.* The ascendancy he gained over the enemies of the Brahmans had, according to the *Ramayana*, rendered the southern regions safe and accessible at the time when Rama crossed the Vindhya range. The scene of the following grotesque and monstrous story of the exercise of his power is laid at Stambhodadhi (Kammasandra), on the banks of the Arkavati, near Nelamangala. There Agastya is related to have had an *ásrama*, and thither came the *rákshasa* brothers Vátápi and Ilvala, who, having obtained the boon that they should be invulnerable to gods and giants and might assume any form at will, had applied themselves to the work of destroying the rishis. Their *modus operandi* was as follows. Ilvala the elder, assuming the form of a Brahman, would enter the *ásrama* and invite the rishi to some ceremony requiring the sacrifice of a sheep. At this, Vátápi taking the form of the sheep was sacrificed and eaten. The repast over, Ilvala would exclaim 'Vátápi, come forth,' when the latter, resuming his natural form, would burst out from the rishi, rending him asunder, and the two brothers eat him up. This plan they tried on Agastya, but he was forewarned. When therefore, after the sacrificial meal, Ilvala as usual summoned Vátápi to come forth, Agastya replied that he was digested and gone to the world of Yama. Ilvala, rushing to fall upon him, was reduced to ashes by a glance.†

Of other rishis, tradition has it that Gautama performed penance on the island of Srīngapatam in the Kávéri, Kanva‡ on the stream at Maḷur near Channapatna, Vibhāṇḍaka on the Tunga at Sringeri, Márkanda on the Bhadra at Kandeya, Dattátreya on the Baba Budans, besides many others in different places.

Asuras and Rákshasas.—'The (asuras and) *rákshasas* who are represented as disturbing the sacrifices and devouring the priests, signify' says Lassen, 'merely the savage tribes which placed themselves in hostile opposition to the Brahmanical institutions. The only other actors who appear, in addition to these, are the monkeys which ally themselves

* To him the Tamil race attribute their first knowledge of letters. After civilizing the Dravidians or Tamil people, he retired to a hill in the Western Ghats still named after him, and was subsequently identified with the star Canopus.

† For the original story see Muir, *Sans. Texts.* ii, 415. Weber considers it indicates the existence of cannibals in the Dekhan.

‡ Of Ilvala perhaps we have a trace in the village of Ilavála, known to Europeans as Yelwal, near Mysore. Vátápi-pura is mentioned in an early Chalukya inscription, and is supposed to be the same as Bádāmi, near Dharwar. *Ind. Ant.* V. 68.

§ Kanva is to the Telugu race nearly what Agastya is to the Tamil.

to Rama and render him assistance. This can only mean that when the Aryan Kshatriyas first made hostile incursions to the south, they were aided by another portion of the indigenous tribes.*

Of the *asuras*, traditions are preserved that Guhásura had his capital at Harihara on the Tungabhadra, Hidimbásura was established at Chitaldroog, Bakásura near Rahman Ghar, Mahishásura, from whom Mysore derives its name, at Chamundi, and so on. The asuras, it is said, being defeated by the devas, built three castles in the three worlds, one of iron on the earth, one of silver in the air, and one of gold in the sky. These the devas smote, and conquered the worlds; the muster of the forces for the assault on the triple city, or Tripura,* having taken place, according to tradition, at the hill of Kuruḍu male, properly Kūḍu male, near Mulbagal.

The *rākshasas* appear to have been a powerful race dominant in the south, whose capital was at Lanka in the island of Ceylon. The kingdom of the *vánara* or monkey race was in the north and west of the Mysore, their chief city being Kishkindha near the village of Hampe on the Tungabhadra. The ancient Jain Rāmāyana, composed in Hale Kannada, by the poet Pampa, gives a genealogy of the kings of either race down to the time of Rama's expedition, which will be made use of farther on, so far as it relates to Mysore. In it we are also introduced to the *vidyátharas*, whose empire was apparently more to the north, and whose principal seat was at Rathanapura-Chakraválapura.†

Haihayas.—In order, however, to obtain something like a connected narrative of events more or less historical of these remote times, we may begin with an account of the Haihayas. Wilson imagines them to be a foreign tribe, and inclines, with Tod, to the opinion that they may have been of Scythian origin and perhaps connected with a race of similar name who first gave monarchs to China.‡ They overran the Dekhan, driving out from Mahishmati, on the upper Narmada (Nerbudda), a king named Bihu, 17th in descent from Purukutsa of the solar line, the restorer of the dominion of the Nágas. He fled with his wives to the forest, where one of them gave birth to Sagara, who became a great conqueror and

* Reference to a city named Tripura will be found in connection with the Kadamba kings, farther on. The legend perhaps means that the indigenous tribes in the west retired above the Ghats before Aryan invaders, and were finally subdued by their assaults penetrating to the table-land from the east, and taking the lofty hill forts.

† The Silaharas of Karahāṭa (Karahad), near Kolapur, are called Vidyátharas. DR. BÜHLER, *Vik. Dev. Char.* Int. 40.

‡ WILSON, *Vish. Pur.* Bk. IV, ch. xi, list note. TOD, *An. Raj.* I, 36. Haihaya was also the name of a great grandson of Yadu, the progenitor of the Yádavas.

paramount ruler in India. He nearly exterminated the Haihayas and associated races,* but, at the intercession of his priest Vasishṭha, forbore from further slaughter, and contented himself with imposing on them certain modes of shaving the head and wearing the hair, to mark their degradation to the condition of outcastes.†

Parasu Rama.—At a later period, Arjuna, the son of Kṛitavīrya, and hence call Kārtavīryārjuna, (which distinguishes him from Arjuna, one of the Pāṇḍu princes), was ruling over the Haihayas. On him the muni Dattātreyā had conferred a thousand arms and other powers, with which he oppressed both men and gods. He is even said to have seized and tied up Rāvana. About the same time a sage named Jamadagni, nephew of Visvamitra, the uncompromising opponent of Vasishṭha, having obtained in marriage Renuka, daughter of king Prasenajit, they had five sons, the last of whom was Rāma, called Parasu Rāma or Rama with the axe, to distinguish him from the hero of the Ramayana. He is represented as the sixth avatar of Vishnu : his axe, however, was given him by Siva.

Jamadagni was intrusted by Indra with the care of Surabhi, the celestial cow of plenty ; and on one occasion being visited by Kārtavīrya, who was on a hunting expedition, regaled the Raja and his followers in so magnificent a manner as to excite his astonishment, until he learned the secret of the inestimable animal possessed by his host. Impelled by avarice, he demanded the cow ; ‡ and on refusal attempted, but in vain, to seize it by force, casting down the tall trees surrounding the hermitage.§ On being informed of what had happened, Parasu Rama was filled with indignation ; and attacking Kārtavīryārjuna, cut off his thousand arms and slew him. His sons in return killed Jamadagni, in the absence of Parasu Rama. Whereupon Renuka became a Sati, by burning herself on her husband's funeral pyre. With her dying breath

* The Sakas, Yavanas, Kāmbojas, Pāradas, and Pahlavas.

† For the bearing of these regulations on certain practices at the present day, see Dr. Caldwell's article on the *kudumi* (Kan. *juttu*) reprinted from the *Madras Mail* in *Ind. Ant.* IV. 166.

For many interesting facts regarding the Haihayas see Central Provinces Gazetteer. With reference to the city mentioned in the last page, it may be noted that Ratnapur in the C. P. is given as an ancient capital of the Haihayas.

‡ There is little doubt that the so called cow was a fertile tract of country, such as Sorab, (literally Surabhi), where the scene of this transaction is laid, is well known to be.

§ The story is differently related in the Mahabharata, but with too unnatural and improbable circumstances, and too manifest a design to inculcate certain Brahmanical notions. The sequel is the same.

she imprecated curses on the head of her husband's murderer, and Parasu Rama vowed after performing his father's funeral obsequies to destroy the whole Kshatriya race.

Having twenty one times cleared the Earth of Kshatriyas, he gave her at the conclusion of an asvamedha, a rite whose performance was a sign of the consummation of victory, as a sacrificial fee to Kasyapa, the officiating priest; who, in order that the remaining Kshatriyas might be spared, immediately signalled him off with the sacrificial ladle, saying "Go, great muni, to the shore of the southern ocean. Thou must not dwell in my territory."* Parasu Rama then applies to Ságara,† the ocean, for some land, and compels it to retire,‡ creating the seven Konkannas § or the maritime regions of the western coast, whither he withdraws to the Mahendra mountain. The Earth, who finds it very inconvenient to do without the Kshatriyas as rulers and kings, appeals to Kasyapa, who discovers some scions of royal houses that have escaped the general massacre of their race, and instals them.

This prodigious legend, in which the mythical type of Brahmanism is clearly enough revealed as arrayed in opposition to the military caste, is by tradition connected with many parts of Mysore. Sorab taluk is the Surabhi which was Janadagni's possession. The temple of Renuka, existing to this day at Chandragutti, is said to mark the spot where she burnt herself on the funeral pyre of her husband, and that of Koláhalamma at Kolar is said to have been erected in her honour from Kártaviryárjuna having there been slain. The colloquy with Ságara is said to have been near Tirthahalli. At Hiremagalur (Kadur District) is a singular memorial in the temple of Parasu, the axe of the hero, and its ancient name of Bhárgavapuri connects the town with him as being a descendant of Bhṛigu. In Chitaldroog District is Parasurámpur, some of the inscriptions at which are partly in Tulu.

Rama.—Our history has next to do with Rama,—called, by way of distinction, Ramachandra,—the hero of the Ramayana and the seventh avatár of Vishnu. On his way home after winning Sita by breaking

* The audacity of the conception is sublime. The explanation given is that Parasu Rama being guilty of homicide could not be allowed to reside in Brahman territory.

† Ságara, the ocean, was so named from Sagar (previously mentioned) through Bhárgatha. The tradition will be found in the Vishnu Purana, &c. The taluk adjoining Sorab is also called Sagar.

‡ According to some accounts he stood on the promontory of Illili, and shot his arrows to the south, over the site of Kerala. It seems likely that we have proof of the local legend being at least as old as the Christian era, as the Mons Pyrihus of Ptolemy is, probably, the mountain of Parasu or Parasu Rama. WILSON *Vish. Pur.* Bk. iv, ch. 7.

§ These were Karáta, Viráta, Maháráta, Konkana, Haiga, Tulava and Kerala

the bow of Siva, he is, strangely enough, said to have been encountered by Parasu Rama, who required him to break a bow of Vishnu which he produced. This Rama did, and at the same time destroyed Parasu Rama's celestial abode. The story of Rama,—a Kshatriya, but obedient to the Brahmins; of the solar line, the son of Dasaratha, king of Ayodhya (Oudh)—and of the abduction, during their wanderings in the Dandaka forest, of his wife the fair Sita, by Ravana, the rākshasa king of Lanka in Ceylon, is too well known to need repetition here. To this day not an incident therein has abated in interest to the millions of India, and few parts of the land but claim to be the scene of one or other of its adventures. Without stopping to dwell on the romantic episode, which will be found in the history of the Katur District, of Rishya Sringa, to whom indirectly the birth of the hero is ascribed, it is evident that Rama's route from Panchavati or Nasik, at the source of the Godavari, to Ramesvara, on the south-eastern coast opposite Ceylon, would naturally lead him across the table-land of Mysore.*

All accounts agree in stating that the first news Rama received that Ravana had carried off his wife to Ceylon, was conveyed to him while at the court of Sugriva, the king of Kishkindha; and that with the forces here obtained he accomplished his expedition and the recovery of Sita. He first met with Sugriva, then dispossessed of his kingdom, at the sources of the Pampa or Tungabhadra, and assisted him in recovering his throne. The former region therefore would be in the Western Ghats, in Katur District; and the situation of Kishkindha is generally acknowledged to be on the Tungabhadra, north of the Mysore,† near the village of Hampe, where in modern times arose the cities of Anegundi and Vijayanagar. The Brahmanical version of the Ramayana, as contained in Valmiki's famous poem, describes the races of this region as *vânaras* and *kapis*, or monkeys. But the Jain Ramayana, previously referred to, calls Kishkindha the *vânara dhvaja* kingdom, or kingdom of the monkey flag. This simple device on the national standard, therefore, may have led to the forces being called the monkey army‡, and thence easily sprung all the other embellishments of the story as popularly received.§ We shall

* The papers concerning Mysore (in the Mackenzie collection) seem to agree in stating that Rama went by way of the Mysore country to Lanka.—TAYLOR, *Cat. Rais. Or. MSS.* III, 693.

† WILSON, *Utt. Ram. Char.* Act I, Sc. 2; MONIER WILLIAMS, *Ind. Ep. Po.* 76; TALBOYS WHEELER, *Hist. Ind.* II, 318.

‡ This is nothing but what we often do in speaking of the military array of the British lion, the Russian bear, &c.

§ The monkey ensign was one of the insignia of the Kalamba kings of Banavasi, and is still a cherished emblem of the Balagai or right hand castes (see next chapter).

follow the Jain version in giving the previous history of the kings of Kishkindha.*

Kishkindha.—By the conquests of Sagara, here made a descendant of Puru,† a prince named Tóyada Váhana (=Megha Váhana), who had thought to marry a princess whom Sagara appropriates, is driven to take refuge with Bhima rákshasa of Lanka; and the latter, being without heirs, leaves to him that kingdom, as well as Pátála Lanka. After many generations, Dhavala Kirtti arises in that line, whose wife's brother, Srikantha Kumára, being desirous of establishing a principality for himself, sets out for the *vánara dvípa*, or monkey island, where the accounts he receives of the Kishkindha hill induce him to select it as the site of his capital. He accordingly founds there the city of Kishkindha, and is the progenitor of the line of kings of the monkey flag.

The successors of Srikantha Kumára, in regular descent, were Vajra Kantha, Indráyudha, Amara Prabhu, (who marries a princess of Lanka), and Kapi Kétu. After several more kings, whose names are not mentioned, the line is continued by Mahódadhi, and his son Pratibindu. The latter has two sons, Kishkindha and Andhraka. A *svayamvara* being proclaimed for Mandara Málí, princess of Adityanagara on the Vijayártha parvata, these two princes attend, as well as Vijaya Simha, son of Asanivega the Vidyádharma chakravarti, and Sukesha, the young king of Lanka. The lady's choice falling on Kishkindha, Vijaya Simha is indignant and attacks him, but is killed by Andhraka. Asanivega, to revenge his son's death, marches against Kishkindha and Sukesha, and takes both their kingdoms. They retire to Pátála Lanka. After a time, Kishkindha founds a city on Madhu parvata, and has there two sons, Rikshaja and Súrýaja. Sukesha, in Pátála Lanka, has three sons—Máli, Sumáli, and Mályavant,—who, on attaining to manhood, recover possession of Lanka. Meanwhile, in the Vidyádharma kingdom, Asanivega has been succeeded by Sabasrára, and he by Indra.‡ The Lanka princes, with the aid of Rikshaja and Súrýaja, attack the latter, but are defeated and again lose their kingdoms, all retiring to Pátála Lanka as before. In course of time, to Ratnásrava, son of Sumáli, is born Rávana, the

* An attempt has been made in Valmiki's Ramayana to supply some of these particulars in the Ut-tara Kánda or supplementary chapter, but the accounts are meagre and much altered.

† The progenitor of one branch of the Lunar line, and, from the similarity of names, sometimes conjectured to be the Porus who was defeated by Alexander the Great.

‡ The Silaharas, who have been identified (p. 175) with the Vidyádharmas, were the rulers of Kolapur, and claim their descent from Jimúta váhana (a name of Indra).—SIR WALTER ELLIOT *Mad. J.* 18, 226.

predestined champion of the rákshasa race. He regains Lanka and Kishkindha, and restores the latter to Rikshaja and Súryaja. Vali and Sugriva, the sons of the last, succeed to the throne. Ravana now demands their sister in marriage; but Vali, being opposed to it, abdicates, and thus leaves Sugriva alone in the government.

On one occasion, Sugriva, owing to some dispute with his wife Sutáre, stays away from his capital; and during his absence, a double of himself, who most closely resembles him, usurps his place and imposes upon all the ministers. The real Sugriva, being in a fix, resorts to his friend Hanumán, son of Pavanjaya, king of Hanuvara or Hanuruha dvípa. Then, hearing about Rama, he visits him at Pátála Lanka, and undertakes to discover Sita's place of confinement in return for Rama's assistance in regaining his throne. Kishkindha is accordingly attacked, the false or Máya Sugriva is killed, and Sugriva restored. News having been received from a neighbouring chief that he saw Ravana bearing Sita to Lanka, a council is now held, at which it is resolved to send to Hanuvara dvípa for Hanumán. The latter arrives, and undertakes to go to Lanka as a spy and discover the truth of the report. He sets out by way of Mahendra parvata* and Dadhi-mukha parvata and brings back tokens from Sita. Forces are at once mustered for the expedition to Lanka for her recovery. The march of the army to the southern sea leads them to Velándha-pura, ruled over by Samudra; to Suveláchala, ruled over by Suvela; and lastly to Hamsa dvípa, whose king was Dvípa-radana.

The identity of the places mentioned in the foregoing account it is perhaps difficult to establish. But it seems not unlikely that Pátála Lanka, evidently, from the name, a city below the Ghats, and belonging to the rákshasa kingdom of Ceylon, was some place in Canara; for the dominions of Ravana are said to have extended to Trichinopoly on the east, and to Gokarna on the west of the peninsula. Honuvara or Honuruha dvípa again is no doubt one of the islands in the large lake of Honavar or Honore† in the Gersoppa district, near the mouth of the Sharavati, which forms the Gersoppa Falls. The principal island in the outer bay was fortified by Sivappa Nayak of Ikkéri, and is now called Basava Rája durga. The north-west of Mysore seems thus pretty clearly

* Mahendra is a name applied to some parts of the Eastern Ghats, and also to a mountain near Cape Comorin.

† The lake is of great extent and contains many islands, some of which are cultivated. It reaches almost to the Ghats and in the dry season is quite salt; but it receives many small streams, which during the rainy monsoon become torrents and render the whole fresh. By the natives it is commonly called a river, but lake is a more proper term. BUCHANAN, *Jour.* II, 279.

connected with an important part of Rama's expedition. Local traditions, less credible in character, will be found noticed under the several places where they are current.

Pandavas.—We will therefore proceed to the history of the Pándus, and briefly notice some of the more important events related in the Maha Bharata which tradition connects with Mysore. Arjuna, the third and most attractive of the five brothers, who by his skill in archery won Draupadi, the princess of Panchála, at her *svayamvara*, after a time went into exile for twelve years, in order to fulfil a vow. During his wanderings at this period, it is related that he came to the Mahendra mountains, and had an interview with Parasu Rama, who gave him many powerful weapons. Journeying thence he came to Manipura, where the king's daughter, Chitrángada, fell in love with him, and he married her and lived there three years, and had by her a son Babhraváhana. The locality of this incident is assigned to the neighbourhood of Chamrajnagar in the Mysore District, where the site of Manipura, to which we shall have again to refer, is still pointed out.*

When Yudhishthira resolved to perform the royal sacrifice called the Rajasúya, by which he proclaimed himself paramount sovereign, it was first necessary to subdue the kings who would not acknowledge him. Accordingly four expeditions were despatched, one towards each of the cardinal points. The one to the south was commanded by Sahadeva. After various conquests he crosses the Tungabhadra and encamps on the Kishkindha hill, where Sushena and Vrishasena, the chiefs of the monkey race, make friendship with him. Thence he goes to the Kávéri, and passing over to Mahishmati (Mahishur, Mysore), attacks Nila its king, whom he conquers and plunders of great wealth. After this he goes to the Sahyádrí or Western Ghats, subdues many hill chiefs, and descending to the coast, overruns Konkana, Gaula and Kerala †

* Manipur in Eastern Bengal, it appears, also lays claim to the story, but evidently on scanty grounds. WHEELER, *Hist. Ind.* I, 349, 425, notes.

† The Maha Bharata in this place (Sabha Parva) makes some singular statements regarding the women of Mahishmati. It is said their beauty was such that the god Agni (Fire) became enamoured of them, and to indulge his passion entered the city disguised as a Brahmin. He was however discovered and seized by the guards, who brought him before the king. When about to be condemned to punishment as an adulterer, he blazed forth and revealed his self as the god Agni. The council hastened to appease him, and he granted the boon that the women of Mahishmati should thenceforth be free from the bonds of marriage in order that no adultery might exist in the land, and that he would befriend the king in time of danger. This description of 'free love' would apply to the Nairs and Namburi Brahmins of Malabar, but seems misplaced in reference to Mysore. It may, however, indicate that a chief of Malabar origin had at that time established himself in power in the south-west; and possibly refer to some stratagem attempted against him by Jumbhagni, which ended in an alliance. Sahadeva was forced to conciliate Agni before he could take Mahishmati.

The fate of the great gambling match which followed the Râjasûya, and the exile of the Pândavas for thirteen years, during the last of which they were to live *incognito*, need not be related here, as they are generally well known. But in the course of their wanderings, the brothers are related to have lived in the Kamyaka forest, and this is claimed to be the wild tract surrounding Kavale-durga in the Shimoga District. The erection of the massive fortifications on that hill is ascribed to the Pandus, as well as the Bhimankatte thrown across the Tunga above Tirthahalli. The thirteenth year of exile was spent at the court of the king of Virâta, in various disguises,—Bhima as a cook, Arjuna as a eunuch, Draupadi as a waiting maid, &c. The varied incidents of this year are fully given in the published abstracts of the poem. It is only necessary here to state that Virâta-nagara is more than once mentioned in the Chalukya inscriptions, and is by tradition identified with Hânagal, a few miles north of the Sorab frontier.*

We pass on to the great *asvamedha*, or horse sacrifice, undertaken by Yudhishthira, which forms the subject of one of the most admired Canarese poems, the Jaimini Bharata. Among the conditions of this regal ceremony, it was required that the horse appointed for sacrifice should be loosed and allowed to wander free for the period of one year. Wheresoever it went it was followed by an army, and if the king into whose territories it chanced to wander seized and refused to let it go, war was at once declared and his submission enforced. In accordance with these rules, Arjuna was appointed to command the escort which guarded the horse. Among the places to which it strayed, three are by tradition connected with Mysore.

The first of these is Manipur, near Chamrajnagar, previously mentioned.† Babhruvâhana, the son here born to Arjuna, had now grown up and succeeded to the throne. His kingdom also was in a state of the highest prosperity. It was pre-eminently ‘a land of beauty, valour,

* SIR WALTER ELIOT says “The remains of enormous fortifications, enclosing a great extent, are still visible. I have got a plan distinctly showing the circuit of seven walls and ditches on the side not covered by the river.” *Mad. J.* 18, 216. Also see *Ind. Ant.* V, 177.

† There appear to me several reasons for accepting this as the locality in preference to Manipur in Eastern Bengal. In the version given by Wheeler, Vol. I, it is stated (396) that the horse when loosed went towards the south, and that its return was in a northerly direction (414); these directions would not lead it to and from E. Bengal, but to and from S. Mysore they would. It is also said (406) that sticks of sandal wood were burnt in the council hall of Manipur, and also (408) that elephants were very excellent in that country. Now Mysore is the well known home of the sandal tree, and the region I have assigned as the site of Manipur is peculiarly the resort of elephants: within 10 miles of that very site was made the remarkably successful capture of elephants described on p. 148. The sequence of places visited by the horse after Manipur is also, as shewn in the text, consistent with the identification here proposed. From the notes (149, 425) it appears that the application of the story to Manipur in Bengal is of very recent date.

virtue, truth : its wealth was fabulous,* and its happiness that of paradise : it was filled with people, and not a single measure of land was unoccupied or waste. When the horse came near this enchanting spot, the Raja was informed of it ; and, on his return from the chase in the evening, he commanded it to be brought before him. The scene is thus described.

‘Now the whole ground where the Raja held his council was covered with gold ; and at the entrance to the council chamber were a hundred pillars of gold, each forty or fifty cubits high ; and the top of each pillar was made of fine gold and inlaid with jewels ; and on the summits of the pillars and on the walls were many thousand artificial birds, made so exact that all who saw them thought them to be alive ; and there were precious stones that shone like lamps, so that there was no need of any other light in the assembly ; and there also were placed the figures of fishes inlaid with rubies and cornelians, which appeared to be alive and in motion. All round the council hall were sticks of sandal, wound round with fine cloth which had been steeped in sweet-scented oils ; and these were burnt to give light to the place instead of lamps, so that the whole company were perfumed with the odour. And before each one of the principal persons in the assembly was placed a vessel, ornamented with jewels, containing various perfumes ; and on every side and corner of the hall were beautiful damsels, who sprinkled rose water and other odoriferous liquors. And when the horse was brought into the assembly, all present were astonished at its beauty and excellence ; and they saw round its neck a necklace of excellent jewels, and a golden plate hanging upon its forehead. Then Raja Babhruváhana bade his minister read the writing on the plate ; and the minister rose up and read aloud, that Raja Yudhishtira had let loose the horse and appointed Arjuna to be its guardian.’

It was resolved that Babhruváhana, being Arjuna’s son, should go forth to meet him in a splendid procession and restore the horse ; but Arjuna, under some evil influence, refused to acknowledge the Raja as his son : he even kicked him, and taunted him with inventing a story because he was afraid to fight. Babhruváhana was then forced to change his demeanour, which he did with great dignity. A desperate battle ensued, in which Arjuna was killed, and all his chieftains were either slain or taken prisoners. Congratulations were showered upon the victor, but his

* Of Solomon in all his glory it is stated that “he made silver and gold at Jerusalem as plenteous as stones.” So here many thousands of chariots, elephants and horses were employed in bringing the revenue, in gold and silver, to a thousand treasures ; and the officers sat day and night to receive it ; but so great was the treasure that the people who brought it had to wait ten or twelve years before their turn came to account for the money, obtain their acquittal and return home ! One raja confessed that he sent a thousand cart-loads of gold and silver every year merely for leave to remain quietly in his own kingdom.

mother Chitrángada swooned and declared her intention of burning herself on Arjuna's funeral pile. In this dilemma, Ulúpi, a daughter of Vásuki, the Nága or serpent raja, whom Arjuna had formerly married, and who had afterwards entered the service of Chitrángada, resolved to get from her father a jewel which was in the possession of the serpents, and which would restore Arjuna to life. She accordingly sent a kinsman to her father with the request. His council, however, being afraid of losing the jewel, refused to give it up. On learning this, Babhruváhana made war upon the serpents and compelled them to give it up. Arjuna was by its means restored to life and reconciled to his son.

The horse then entered the territory of Ratnapura, a city of which name, it will be seen, was situated near Lakvalli in Kadur District. The animal was here seized, but rescued by Arjuna. It next wandered into Kuntala, the country of Chandrahása, whose capital we shall find was at Kubattur in Shimoga District. Here also the king was compelled to release it.

The story of Chandrahása is a pleasing and favourite romance. He was the son of a king of Kerala, and was born with six toes. While an infant, his father was killed in battle, and his mother perished on her husband's funeral pile. His nurse then fled with him to Kuntala, and when she died, he was left destitute and forced to subsist by begging. While doing so one day at the house of the minister, who is appropriately named Dushṭa buddhi or evil counsel, some astrologers noted that the boy had signs of greatness upon him, indicating that he would one day become ruler of the country. The minister, hearing of it, took secret measures to have him murdered in a forest; but the assassins relented, and contented themselves with cutting off his sixth toe, which they produced as the evidence of having carried out their instructions. Meanwhile, Kulinda, an officer of the court, hunting in that direction, heard the boy's cry; and pleased with his appearance, having no son of his own, took him home to Chandanávati and adopted him.

He grew up to be very useful and, by defeating some rebellious chieftains, obtained great praise and wealth for his adopted father, which excited the jealousy of the minister. The latter, resolved to see for himself, paid a visit to Kulinda, when to his astonishment he learnt that all this prosperity was due to an adopted son, Chandrahása, who had been picked up in the forest years ago bleeding from the loss of a sixth toe. The truth at once broke upon him that it was the boy he had thought to murder. Resolved more than ever to get rid of him, he dissimulates and proposes to send him on an errand to court, which was gladly

enough undertaken. A letter was accordingly sent by him to Madana, the minister's son, who was holding office during his father's absence, directing that poison (*visha*) should be at once given to the bearer as he valued his own advancement. For the minister had secretly resolved, as there was no male heir to the throne, to marry Madana to the king's daughter and thus secure the kingdom to his own family. Chandrahāsa, bearing the letter, arrived near the city, where he saw a charming garden. Being weary, he tied his horse to a tree and lay down to rest, when he fell asleep.

Now it so happened that this garden belonged to the minister, and that morning his daughter Vishaya (to whom, before leaving, he had jestingly promised to send a husband,) had come there with the daughter of the Rājā and all their maids and companions to take their pleasure; and they all sported about in the garden and did not fail to jest each other about being married. Presently Vishaya wandered away from the others and came to the tank, where she saw the handsome young Chandrahāsa lying asleep on the bank, and at once fell in love with him. She now noticed a letter half falling from his bosom, and, to her great surprise, saw it was in the handwriting of her father, and addressed to her brother. Remembering what had been said about sending her a husband, she gently drew out the letter and opening it, read it. One slight alteration she saw would accomplish her wishes; she accordingly changed the word *vishava*, poison, into *vishaya*, her own name, resealed it with a copy of her father's seal which she had with her, and replaced it in the young man's bosom.

When Madana received the letter he was greatly surprised, but as the message was urgent, at once proceeded with arrangements for marrying his beautiful sister to the handsome stranger. The ceremony had just been concluded with all manner of pomp and rejoicing, when the minister returned. Seeing what had happened, he was struck dumb with amazement. The production of the letter further convinced him that through fate the mistake must have been his own. Suffice it to say that he makes another attempt to get rid of Chandrahāsa, but it so chances that his own son Madana is killed instead; and Chandrahāsa, taking the fancy of the king, is adopted as heir to the throne and married to the princess. Whereon the minister, driven to desperation, kills himself.

Janamejaya.—Before quitting the legendary period, there is yet one tradition demanding notice. During the first twelve years' exile of Arjuna, before visiting Manipur, he had married Subhadra, the sister of Krishna. By her he had a son named Abhimanyu. When, at the conclusion of the thirteenth year of the second period of exile, the Pāṇḍavas threw off their incognito at the court of Virāṭa, the rājā offered his

daughter Uttara to Arjuna. But the latter declining her for himself, on the ground that he had acted as her music and dancing master, and she had trusted him as a father, accepted her for his son Abhimanyu, from which union sprung Parikshit,* whose son was Janaméjaya. This is the monarch to whom the Maha Bharata is recited.

Parikshit, according to a curse, died by the bite of a serpent†; in revenge for which, Janaméjaya performed his celebrated *sarpa yága* or serpent sacrifice. This ceremony, according to tradition, took place at Hiremagalur in the Kadur District, and three agraháras in the Shimoga District,—Gauj, Kuppagadde and Begur—possess inscriptions on copper plates, written in Sanskrit, in Nágari characters, professing to be grants made by Janaméjaya to the officiating Brahmaṇas on the occasion of the *sarpa yága*. The genuineness of the first of these, which is the one best known,‡ has been a subject of much controversy: but all three are almost identical in the historical portion. They describe the donor as the son of the emperor Parikshit; of the *Soma rams'a* and *Pándava kula*; having a golden boar on his flag, and ruling in Hastinapura. The grants are made during an expedition to the south, in the presence of the god Harihara, at the confluence of the Tungabhadra and Haridra. The inscriptions are undoubtedly ancient, but it is impossible to accept them as dating from the commonly received period for the commencement of the Kali yuga, when Janamejaya is said to have reigned, namely 3102 B. C.§ Their dates are thus expressed.

(Begur).—Kaṭakam utkalite Chaitra máse kṛṣṇa pakshe Bhauma dine tritáyám Indrabha nakshatre sankránta vyatipáta nimitta.

(Gauj).—Kaṭakam utkalita Chaitra máse kṛṣṇa pakshe So? . . . karaná uttaráyama sa . . . vyatipáta nimitta saurya parhani ardha grása mahita samae.

(Kuprag).—Kaṭakam utkalitam Chitra máse kṛṣṇa pakshe Somaváre Dharani mahá nakshatre sankránti vyatipáta nimitta.

* He was a posthumous son and still-born, but Krishna pronounced some words over the boy which instilled life into it.

† The Bhágavata Purána was recited to him between the life and his death! The supposed meaning of the legend is, that Parikshit met his death at the hands of a Nága tribe, and that his son exterminated the Nágas in revenge.

‡ See COLERBROOKE, *As. Res.* IX, 446. The words within brackets in the date of the Gauj plate are taken from him. They seem to have got broken off since his time, being at the edge of the plate.

§ An inscription, 360 years old, at Tada Málingi, opposite Talkád, is dated as follows—*Kali varu-shada pramánuda 432000 ke sanda varusha 3179 S aka varusha 1435 ubhayaam 4614 neya varusha sandu na huva varusha Srimukha samvatsara*—which gives that date for the commencement of the Kali yuga. It is reckoned to have begun on the 18th of February 3102 B. C., at midnight on the meridian of Ujjayini.

A well known native astronomer* has with great patience worked out the calculations for me, and maintains that they accord with no other year but B. C. 3066. He also states that there is an interval of twelve days between the first date and the other two; and that the former marks the beginning, and the latter the conclusion, of the sacrifice. On the other hand, the eclipse mentioned in the Gauj agra-hāra inscription, is stated†, on the authority of Sir G. Airy, to have happened in A. D. 1521. But I have a Chalukya inscription, dated S. S. 366 (A. D. 444), which corresponds so closely in many of the particulars and in the peculiar terms of these grants that I am inclined to think this may prove to be nearer the true date than either of the others. The boar or *varāha*, the third incarnation of Vishnu, was the symbol adopted by the Chalukyas, and after them by the kings of Vijayanagar. As regards the expression *Kaṭakam utkalitam*, which has puzzled the learned here, it appears that Kaṭaka, better known as Cuttack, was the ancient capital of Utkala or northern Orissa, and that according to tradition 'this city was built by Janamējaya after the performance of the Naga sacrifice.'‡

Regarding the chronology of the events which have been mentioned in the foregoing account of the legendary period, it can only be stated generally, that the destruction of the Kshatriyas by Parasu Rama is said to have taken place between the Treta and Dvāpara ages; and that an era of Parasu Rama used in Malabar dates from 1176 B. C. Rama's expedition against Lanka, assigned to the close of the Treta age, is supposed to have taken place about the thirteenth century B. C.§ and the war of the Maha Bharata about fourteen centuries B. C.|| The earliest version of the two epics must have been composed before 500 B. C.**

Buddhist Period.

Of the period when Buddhism was the state religion, or from about 500 B. C., the records, as previously mentioned, are few, owing to

* Siddhānti Subrahmanya S'āstri.

† J. Bo. Br. R. A. S. X, 81.

‡ BABU RANGALAL BANERJIA on grant dated about 500 A. D., published by Mr. BEAMES, *Ind. Ant.* V. 59.

§ GRIFFITH, *Ram. Int.* xv.

|| WILSON, *Vish. Pur. pref.* ci. A Chalukya inscription of the 6th century makes the era of the war of the Maha Bharata 3146 B. C. *Ind. Ant.* V. 68; J. Bo. Br. R. A. S. IX.

** The Kali Yuga or fourth age of the world was supposed to commence at the birth of Krishna. Hence the events of the Mahā Bhārata must have taken place during the third or Dvāpara age, and those of the Rāmāyana at the end of the second or Treta age. MONIER WILLIAMS, *Ind. Wis.* 323, 315 ff.

systematic destruction from sectarian motives. But the discoveries of Prinsep, and more recently of General Cunningham, together with the examination of the records of Greek geographers and Buddhist pilgrims, and of the Buddhist literature of Ceylon, Tibet and China, have thrown much light upon the history of India at that time. Evidence is not wanting that Buddhism, and more particularly the cognate system of Jainism, prevailed throughout Mysore from a very early period.

Regarding Buddhism it is stated in the Mahawanso that in the 18th year of the reign of Asoka, or B. C. 245, a great religious council was held at Pataliputra, and at the conclusion of this, the third convocation, *theros* or Buddhist missionaries were despatched to various countries for the purpose of establishing the religion of Jina, the vanquisher, (a name of Buddha). Among these the *thero* Mahádeva was sent to Mahisha-maṇḍala, and the *thero* Rakshita to Waniwási.* It is not difficult to recognize in the latter the country of Banavasi in the north-west of Mysore, and the former is considered to be identical with Mahishúr or Mysore. The Pallavas, mentioned further on, in whose kingdom the east of Mysore was included, must, from their remains, have been of the Buddhist faith. Some at Golgán-pode will, I think, on examination prove to be an old *stúpa*. So late as 1129 a *Bauddhálaya* is described as existing at Balligáve (Shikarpur taluk), the capital of the Banavase Náḍ.†

In the history of Jainism in Mysore, an early event was the arrival at Srávana Beḷgoḷa of a great company of emigrants from Ujjain, in Malwa, under the leadership of Bhadra Báhu.‡ They had left their country on account of a twelve years famine he had predicted, and were on their way to the south. But when they reached this spot, Bhadra Báhu died; and there, in consequence, the present Jain settlement was afterwards established. These events, if connected, as alleged, with the famous Chandragupta, must have occurred in the fourth century B. C. Bhadra Báhu was one of the *sruta kevalis* or hearers of the *kevalis*, the immediate disciples of Varddhamána or Mahávira, the great apostle of the Jain faith; and was apparently posterior to him about 170 years. The date of Varddhamana's death is variously stated, but is now generally assigned to the first half of the 6th century B. C., which reckoning accords

* TURNOUR, *Mahawanso*, 71; *Ind. Ant.* III, 273—cf. CUNNINGHAM, *Anc. Geog. Ind.* 488.

† *Mys. Ins.* S. S. 42. ‡ *Ind. Ant.* III, 153-8.

with the period above stated for Bhadra Bahu on different data. The colossal statue of Gomātesvara at Srāvana Belgola has at its foot inscriptions* that it was erected by Chāvunda or Chāmunda Rāya, who, according to Jain chronology, must be assigned to 50 or 60 B. C.†

To the Buddhist period must belong the rule of Yavana kings at Anegundi, of which there are said to be traditions. The Yavanas are identified with Ionians or Asiatic Greeks, connected doubtless with the Græco-Bactrian or Parthian kingdom in the north-west of India. 'From the silent testimony of coins' says Dr. Hunter, 'with which no subsequent ages can tamper, scholars conclude that the Ionian kings in northern India merged into Buddhistic dynasties; so in middle and southern India the Yavanas everywhere appear either as the representatives or as the heralds of the reformed religion. While Buddhism continued as Buddhism in India the Yavanas were typical Buddhists; and when it merged into Jainism the Yavanas became equally identified with the Jain faith.'‡

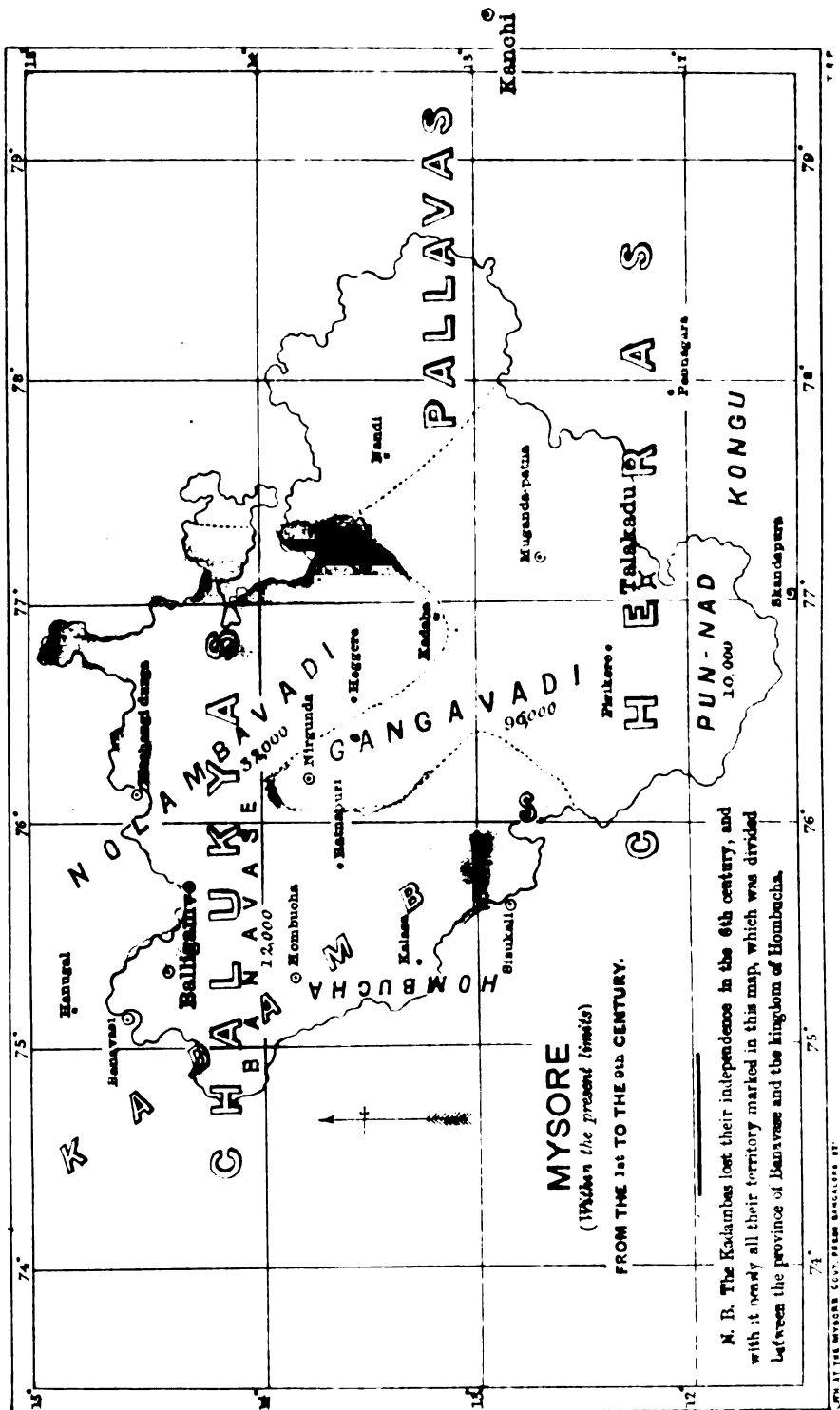
Historical Period.

We now enter upon a period the history of which is elucidated by authentic records. At the commencement of the Christian era, the Mysore country was occupied on the west by the Kadambas, on the south by the Kongus or Cheras, and on the east by the Pallavas. A part of the north may have been in possession of the Rattas or Raddis. In the 5th century, the Chálukyas reduced the Rattas and Kadambas to the condition of feudatories, and prevailed against the Pallavas, who were also attacked by the Cheras. Early in the 9th century, the Rattas regained power over the Chálukyas, and at the close of that century the Cholas subdued the Cheras; but from the ruins of the Chera empire arose the Hoysala Ballálas, and at the close of the 10th century the Chálukyas were once more in the ascendant. In the 12th, the Chálukya power was subverted by the Kalachuryas, in whom the Hailhayas reappear; and they, in their turn, were shortly dispossessed on the south by the Hoysala Ballálas and on the north by the Yánavas. Both these

* In Sanskrit characters,—*Srī Chāvunda Rājē karaviyale*.—In Haḷe Kannaḍa,—*Srī Chāmunda Le-jā mādisidam*.—In Grantha, to the same effect.

† WILSON, *Works*, I, 333.

‡ *Orissa*, I, 228.



kingdoms, again, were overthrown in the middle of the 14th century by the Muhammadans. But the Vijayanagar empire then arose, which held sway over the whole of the south till the latter half of the 16th century, when it was subverted by a confederacy of Muhammadan powers. Of these, Bijapur secured a great part of Mysore, but was overcome in the 17th century by the Moguls, who took possession of the north and east of the country. Meanwhile the Mysore Rajas gained power in the south, during the contests which raged between the Mahrattas and the Moguls, and between rival claimants for power on the death of Aurungzib. Haider Ali extended the Mysore dominion over the Mogul provinces in the east and north, and over Bednur in the west, usurping supreme power in 1761. On the capture of Sernigapatam by the British and the downfall of Tipu Sultan, in 1799, the country included within the present limits was granted to the representative of the Hindu Rajas. In 1832 it was placed under British Commissioners, and in 1867 its restoration on the majority of the present Maharaja, now a minor, was provided for. Such is an outline of the changes of nineteen centuries, the details of which we will proceed to fill in.

Kadambas.—The Kadambas were a royal line of great antiquity ruling in Haiga (N. Canara), Tulava (S. Canara), and the whole west of Mysore. Their origin is thus related. Some ages after Parasu Rama had recovered Haiga and Tulava from the sea, Siva and Parvati came to the Sabyádri mountains, the Western Ghats, in order to look at this new country; and in consequence of their pastimes a boy was born under a *kadamba* tree, whence the name of the dynasty. According to another account, he was born from the drops of sweat which flowed from Siva's forehead to the root of the kadamba tree in consequence of his exertion in conquering the asura Tripura.* The people of the country, being at the time without a monarch, had recourse to the state elephant, which, being turned loose carrying a wreath, presented it to the youth whose birth was so miraculous, and he was consequently proclaimed king. He is variously styled Jayanta, Trilochana Kadamba, and Trinetra Kadamba, and is placed on the faith of inscriptions in the first half of the 2nd century. Banavasi, the capital of the Kadambas, is mentioned

* The tree is said to have been produced by a drop of nectar which fell upon the earth from the churning stick, namely, the Mandara mountain, at the churning of the ocean. The tall and handsome trees bearing this name are species of *nauclea*, of the natural order *cinchonaceae*, and grow in many parts of India.

by Ptolemy. It is situated on the river Varada, on the western frontier of the Sorab taluk.

After Trinetra, the kings in regular succession were Madhukesvara, Mallinātha, and Chandra Varmma. The last had two sons, named Chandra Varmma or Chanda Varmma, and Purandara, the elder of whom* was the father of Mayūra Varmma, who became king of Banavasi and there obtained 'the sword of sharpness, the shoes of swiftmess, and the garment of invisibility.'

Mayura Varmma appears to have received a large accession of territory from Raja Vallabha, prince of Kalyāna-pura, together with his daughter Sasānka-mudre, in return for rescuing his wife Sasiprabhe from a Yaksha named Kandarpa Bhūshana, living in Hemanta-gube, who had carried her off. He is also stated to have introduced Brahman colonists from Abichhatra† and distributed the country below the Ghats into 64 portions which he bestowed upon them, appointing Brahman governors in four cities, namely, Kesargod, Barkur, Mangalore, and Kadaba. In the reign of his son the Brahman attempted to leave the province, but they were brought back, and in order to prevent a repetition of the attempt were compelled to leave unshorn a lock of hair on the forehead as a distinguishing mark. This king is variously named Kshetra Varmma, Chandragada and Trinetra Kadamba. During his reign a kinsman named Chandrasena governed the southern portion of Tulava, and the Brahman were spread into those parts. Lokāditya or Lokādīpya, son of Chandrasena, married Kanakavati, the sister of Trinetra, and had by her a daughter, whom Hubāśiga, the king of the mountain Chandālas, sought as a wife for his son. In pretended compliance he was invited to Tripura, the residence of Lokaditya, as if to celebrate the marriage, but there treacherously murdered. The authority of the Kadambas was

* A strange story, which seems to have a meaning, is related of Chunda Varmma, that he rescued from the flames of a forest-fire a serpent named Manjisa, which, entering into his mouth, took up its abode in his stomach. Wandering about in search of a cure, he arrived at Kalyāna-pura, where a woman directed him to worship the goddess Kālīka and the elixir of a serpent carved on a stone at the back of her temple. Another serpent now appeared out of an ant hill, and tried to persuade Manjisa to come forth, but without success. The woman, overhearing the dispute between the two, speedily possessed herself of certain plants they had threatened to use against each other,—*vishnavardī* and *sarpavardī*, growing at the foot of an ant hill, and *ahinūtra hari*, a creeper spreading over the *asvattha* tree. Manjisa was expelled and died by virtue of the juice of the former, and the other serpent was got rid of by that of the latter.

† The capital of N. Panchala (Rohilkhand in Central India). In 1430 B. C., just before the great war of the Maha Bharata, the king of Panchala named Drupada was conquered by Drona, the preceptor of the Pāndus, who kept the north for himself and restored the south to Drupada. CUNNINGHAM, *Anc. Geo. Ind.*, I, 359 ff.

extended in consequence above the Ghats and the Brahmans followed this accession of territory.* Lokadīpya is said to have reigned 50 years.

The list of Kadambas obtained by Sir Walter Elliot from inscriptions is as follows:—Mayūra Varṃma, Krishna Varṃma, Nāga Varṃma, Vishnu Varṃma, Mṛiga Varṃma, Satya Varṃma, Vijaya Varṃma, Jaya Varṃma, Nāga Varṃma, Śānta Varṃma, Kirtti Varṃma, Aditya Varṃma, Bhattaya Varṃma, Jaya Varṃma, Mayūra Varṃma, the last ruling in 1034—44. He had five sons, of whom the second, named Tailapa, was ruling in 1054. The third son, Śānti Varṃma, had also a son named Tailapa, who ruled from 1077 to 1108. His son was Namra Bhūpa Permaḍi. Subsequent to these were Śānti Varṃma, Taila (1157), Karna, Sovi or Somesvara, and Vira Malli, 1241—51.†

From other sources it has been ascertained that Krishna Varṃma's sister was married to the Kongu king Mādhava, which makes his date about 400.‡ In inscriptions seen by me at Banavasi, a Kirtti Varṃma of the Kadamba line was ruling there in 1068, and Buchanan mentions a Purandara Raya in 1121. The inscriptions published by Mr. Fleet§ give us the following succession: Guhalla Deva, Shashṭha Deva, Jaya Kesi, Vijayāditya, and Jaya Kesi or Jaya Siva (1029,¶) who married Mailala Mahādevi “the ruby of the Chalukyas.” Their sons were Siva-chitta or Permāḍi, and Vishnu-chitta, Vikramarka or Vijayāditya. The latter had a son Jaya Kesi, who was ruling in 1187.

The *Dvaiśharīya* || has a romantic story regarding the daughter of Jaya Kesi, who became the wife of Karna Raja, the king of Chedi or Bandalkhand. A painter once visited his court and exhibited a roll with portraits on it. ‘There Lakshmi was represented dancing before the raja, and there was painted a maiden much more beautiful than Lakshmi. When the raja saw it he praised the maiden's beauty exceedingly. He inquired of what race the maid was, and the painter answered: ‘There is in the Dekhan a city named Chandrapur; the king thereof is Jaya Kesi; this maid is his daughter, the princess Mayānalla Devi, in the bloom of youth. Many princes wish to wed her, but she accepts of none. Her attendant told her that the flower of her age was passing away, and that she should accept a husband: then the maid began to worship Gauri, to obtain a bridegroom full of qualities. The Bauddha Jatis

* Such is Wilson's account (*McK. Coll.* I, ciii) with additions from a manuscript in my possession.

† *Mad. J.* 18, 227.

‡ *Ind. Ant.* I, 369; II, 155.

§ *J. Bo. Br. R. A. S.* ix, 231.

¶ *Mys. Ins.* S. S, 44.

|| A work of the 12th century, by Hemāchārya, a great Jain scholar of Gujarat.

too, that shave the hair of their heads and their beards, having painted portraits of many royal princes, showed them to the princess. Afterwards some unskilled painter who came to Chandrapur exhibited your portrait to this princess, who when she saw it agreed to marry you. When she sees birds flying from this direction she asks if they are come from Raja Karna: she refuses to eat or drink, and because her desire to marry you is not speedily gratified she is grieved. For this reason the maiden has sent me privately to your presence. She has sworn that she will have no other bridegroom, and Jaya Kesi Raja also has authorized my coming.' Having thus spoken, the painter presented the gifts of gold, jewels, &c., which Jaya Kesi had sent. Karna received them, and great eagerness to marry this damsel arose in his mind. The painter said moreover that his Raja Jaya Kesi, knowing Karna to be a great Mahārāja, had sent an elephant as a present, which he prayed might be accepted. Karna agreed and asked where the elephant was: he was told it was in the garden. He went out privately to see it, and after having examined it, went on into the garden, where he saw a very beautiful woman. He considered whether this was not the same whose portrait he had seen in the roll. The Raja asked her attendant who the lady was. She answered that her father's race was called Kadamba, and that she was the princess, the daughter of Jaya Kesi, Raja of the Dekhan, who had come thither with the desire of marrying him,—having taken an oath that if otherwise, she would burn herself. Karna said he would marry the lady, and made her his *Pat Rāni*.*

The following were also Kadamba kings; but whether predecessors of Mayūra Varma or another branch of the family is not clear: Kākus-tha Varma, Sānti Varma, Mrigesa; the sons of the latter—Ravi Varma, Bhīnu Varma, and Siva-ratha; and the son of the first of these—Hari Varma. Wilson closes his account with Sankara Deva, the last of 74 kings, in 1336, the date of the foundation of Vijayanagar.

Notwithstanding that the exact succession of the Kadamba kings has not as yet been determined, which is hardly surprising when it is considered that their reigns extend over fourteen centuries, there are certain facts regarding their history well ascertained. Passing over the statement that before the time of Mayūra Varma the Kadamba kings had performed eighteen *asvamedhas*, we learn from many inscriptions that among their insignia were the monkey flag and the lion signet: the former would connect them with the ancient kings of Kishkindha. Up to the 5th century they were independent, but being then subdued

* *Ind. Ant.* iv, 233

by the Chálukya king Kirtti Varmma, they were reduced to the condition of feudatories. Their jurisdiction seems to have been thence limited to the province of Hánagal or Panangal until the tenth century, when they appear as lords of Banavasi as well as of Hánagal and other places. It seems not impossible that they assisted the Chalukya king Vikrama to dethrone his brother, and were rewarded with the government of great part of their ancestral dominions. Their capital was later established at Goa. The connection of the founders of Vijayanagar with the Kadambas has not been established, but the former were certainly descended from 'a Tulava family of ancient origin and power, whose dominions extended towards the western sea',* and the Kadamba grants, which continue up to the time of the rise of Vijayanagar, then cease.

Cheras or Kongus.—Of these kings, our knowledge till lately was derived entirely from the *Kongu desa rájakal* †, one of the Mackenzie manuscripts. But valuable inscriptions recently discovered have thrown great light upon their history.‡ Kongu was the name of the country under their sway, and not a designation of the royal line. No distinguishing name in fact is assumed by this house in their inscriptions, though Kongaṇi seems to be the most general title of the dynasty.

They are supposed to be identical with the Chera kings, who are mentioned along with the Pandyas and Cholas in the ancient history of the south. 'In its early state' says Wilson, 'the Chera principality comprehended the extreme south of the Malabar coast or Travancore; and consisted of that province, Wainad; the Nilgiri mountain district, the southern portion of Coimbatore and part of Tinnivelli. In this tract we have in Ptolemy the people called *Carei*, and not far from it *Carura Regia Cerebothri*, in which, making an allowance for inaccuracies of sound and expression, we have the *Cheras* and *Carur*, still a city in the district, and *Cherapati* the sovereign of Chera.'§

The first seven kings are said to have been of the Súrya vamsa or solar line, and the Raṭṭa or Raḍḍi kula. The seventh king abandoned the Jain faith for that of Siva, and of the succeeding kings some were followers of Siva and some of Vishnu. With the eighth the line changed to the Jáhnvi kula (=the Ganga vamsa) and the Kánváyanasa gotra.

* WILSON, *McK. Coll.* I, civ.

† Summarised by WILSON, *McK. Coll.* I, xcii; DOWSON, *J. R. A. S.* VIII, 2; TAYLOR, *Cat. Rais. Or. MSS* III, 32; LASSEN, *Ind. Alt.* II, 1017.—Translated by TAYLOR, *Mad. J.* XIV, 1.

‡ *Ind. Ant.* I, 363; II, 155; V 133.

§ *McK. Coll.* I, xcii.

Their dominion of Kongu seems to have corresponded with the Coimbatore, Malabar and Salem Districts, and their capital was Skandapura, which Lassen places at Gajalhatti on the Chamrajnagar frontier, the old pass through the Eastern Ghats from Mysore down to Trichinopoly. In the third century the seat of government was removed to Talkād on the Kāvéri, and all the south of Karnāṭa or the Mysore country brought under their sway, up as far as Nirgunda in Hosdurga taluk on the west and the Northern Pennar on the east. At a later period, in the seventh century, the royal residence was for some time at Mukunda-patna, now the village of Molur near Channapatna.

The seal of the Kongus bore the device of an elephant, and with the use of this animal they seem to have been very familiar. They were evidently a hardy and manly race, for one king reckons a wound received in war as his principal ornament, of another it is said his arms were grown stout and hard with athletic exercises, and were adorned with hard knobs, produced by the discharge of his bow, as if with brilliant gems. Their skill in horsemanship is more than once mentioned. At the same time they did not despise learning, for two of them are described as authors of books.

The following is the succession of kings according to the latest authorities :—

	Period A. D.		Period A. D.
Vira Raya Chakravarti.		Sri Vikrama or Tri Vikrama.	
Govinda Raya.		Bhu Vikrama Raya ...	539
Krishna Raya.		Vilanda, Raja Sri Vallabhākhyā.	
Kali Vallabha Raya.		Nava Kāṇa, Raja Govin la Raya.	
Govinda Raya	... 82	Sivaga, Konguni Maharaja	668
Chaturbhujā Kunara Deva Chakravarti.		Bhina Kopa.	
Sri Vikrama Deva Chakravarti	... 178-188	Raja Kesari.	
Konguni Varmma Dharmma		Prithivi Konguni Mahādhiraja	727-777..
Mahādhiraja	... 188-239	Raja Malla Deva Raya.	
Mādhava Mahādhiraja	... 239-	Ganda Deva Maharaya.	
Hari Varmma	247-288..	Satya Vākya Konguni Varmma	
Vishnu Gopa	..	Dharmma Mahādhiraja	857
Mādhava	425	Gunalottarna Deva Raya.	
Konguni	... 425-478	Malla Deva Raya.	878-894..
Avinita, Durvinita or Konguni Vriiddha	478-513..		
Mushkara Raya.		Gangarasa, Konguli Varmma Dharmma	
		Maharajadhiraja	1065

Little is known of the first six kings, save that a learned Jain named Naga Nandi was *guru* to the last three. Sri Vikrama or Tri Vikrama abandoned the Jain faith for that of Siva, and after his conver-

sion made many conquests in the Chola, Pandya, Kerala and Malayala countries. It was in this reign apparently that the Kongu dominion was extended over parts of Karnata or Mysore.

With the eighth king commences a new dynasty, that of the Jáhnavi kula or Ganga vamsa. This monarch, the first Kongani, is said to have gained renown by dividing with a single stroke of his sword a great *silā stambha* or stone pillar. It is not clear what this refers to, but *silā stambha* was the name given to the *lúts* or pillars on which the edicts of the Buddhist monarch Asoka were inscribed. None have, so far as I am aware, been found south of Gujarat and Orissa ; but is it not possible that one may have been erected which was overthrown by this king? Otherwise it may have been a pillar of victory erected by some other king: it could hardly have been a *linga*. His successor Mádhava is stated to have been the author of a treatise on the law of adoption. Ilari Varmma removed the royal residence to Dalavana-pura or Talakádu (Mysore District), and there the succeeding kings were crowned.

There is a discrepancy in the account of the immediate successors of Vishnu Gopa. According to the chronicle previously referred to, Vishnu Gopa, being childless, adopted a son named Mádhava, who was installed in the government in subordination to the king. But the latter afterwards had a son born to him, Krishna Varmma, who was anointed as his successor, and Mádhava provided with some territory below the Ghats. Krishna Varmma dying childless, Dindikara Raya, a connection of Mádhava's, obtained the kingdom. But the ministers set him aside in favour of Kongani, the son of Krishna Varmma's sister.

The inscriptions which have been discovered of this line give no support to the break in the succession according to the above account. On the contrary, they are explicit in stating that the second Mádhava was the son of Vishnu Gopa, that he married the sister of Krishna Varmma the reigning monarch of the Kadamba family, and that the second Kongani was the offspring of this union. We further gather that Mádhava died about the time of his son's birth, and that the latter received his coronation-anointing while an infant on his mother's lap. We have evidence that in the course of his reign, or the middle of the 5th century, the dominions of this house were extended over Mysore as far as the Northern Pennar near Dod Ballapur eastwards, and to Nirgunda (Chitaldroog District) westwards. During the last two reigns there was evidently a revival of Brahmanical influence under the royal patronage.

Avinita, son of the last, appears to have been a remarkable character. His names are singular, and he is credited with a mastery of magical incantations. He was the author of a commentary on the *Kirátárjunīya*. He obtained in his father's time the recognition of royal rights in Pirikere, and waged sanguinary wars for the possession of Andari, Alattur, Paurulare, Pelnagara and other cities. The situation of all these places has not been determined, but Alattur may be the village of that name in Hadanád, the cradle of the present royal family of Mysore, or else in Malalar; and Pirikere may be the original form of Puragere, preserved by tradition as the name of the village which afterwards became the city of Mysore. Pelnagara or Pennagara must be the place so called (the Pinagra of Wilks,) situated at the foot of the Ghats, near the Kaveri, a little west of Dharmapuri in the Salem District. The south of the Mysore District then consisted, we also learn, of a province called the Púnád or Pun-nád Ten thousand.* Its chief was named Skanda Varmma, and his daughter we are told fell in love with Avinita and became his wife, although her father had betrothed her to some one else. By his conquests Avinita is said to have exacted tribute from the kings of Kerala, Pandya, Chola, Dravida, Andhra and Kalinga.

Of the succeeding kings, the third Kongani or Raja Sri Vallabhákhyia (according to one account the latter was brother and commander-in-chief to the former), is described as having subdued the Pallava king, and carrying his victories over the whole of the Peninsula, up even to the Nerbudda, taking tribute from Chola, Pandya, Dravida, Andhra, Kalinga, Viráda, Maharashtaka and other countries. On his return from this expedition he strongly fortified Talkad. The next king, Raja Govinda Raya, as well as his successor, resided chiefly at Muganda-patna which has been identified with the village of Molur near Channapatna. Ganda Deva is related to have conquered Kanchi patna (or Conjeveram) and levied a tribute upon Dravida. He also fought with the Chola king, and impressing him with fear, afterwards made friendship with Chola and Pandya. Of Satya Vákya Raya (the monarch whose word is truth) an inscription exists in Coorg. He was succeeded in turn by two brothers, the younger of whom, Malla Deva, is related to have defeated an attack by the Pandya king.

* That is, as supposed, yielding a revenue of 10,000 (? pagodas).

With his reign the annals of the sovereignty of this interesting and important line of kings terminate. A Chola king took Talkad in 894 or soon after, and the Kongu-Karnāṭa dominions of which it was the capital passed into the hands of the Cholas. An inscription at Nīrgunda, dated 1065, exhibits a Gangarasa still retaining the sounding titles of Konguli Varmma Dharmma Mahārājādhīrāja, but as a petty officer of the Hoy-sala Ballālas, ruling the Arabela Seventy. This is the last direct trace I have met with in Mysore of the fallen dynasty within their own dominions, unless the Ganga Raja of Sivasamudram (which see, Vol. II) was connected with them. But in the inscriptions of Satya Vākya he assumes the titles of lord of Kolālapura and of Nandagiri, and in the reign of the Chalukya king Bhuvanēka Malla, or 1069—1076, we find* Udayāditya, at first one of his generals and then governor of Banavase, calling himself a Ganga, and adopting the same titles, together with an elephant signet, the crest of the Kongus. It seems, therefore, that before their overthrow they had extended their possessions over the Kolar District, previously held by the Pallavas; and that when the final catastrophe occurred the chief part of the family fled northwards and found refuge in the Chalukya territory.

But the enterprising descendants of this line it doubtless was who, driven forth from their ancestral possessions, made their way in advance of the tide of Chola conquest, and established in Orissa the Ganga vamsa line of kings, acknowledged to have come from Karnāṭaka.† The first of that dynasty is known as Chor Ganga, who obtained the throne in 1132. According to one inscription his name was Rudra Deva, and his genealogy for three generations back is thus given: first Tribhuvana, then Malla Deva and lastly Proli Raja. The latter was the conqueror of Warangal.‡

The following is the succession of the Ganga vamsa kings of Orissa, as given in the chronicles preserved in the temple of Jagannath at Puri§

Chor Ganga (Churanga, Suranga Deva, Rudra Deva.)	...	1132—1152
Gangesvara	...	1152—1166
Ekajataka Deva	...	1166—1171
Madana Mahadeva	...	1171—1175
Ananga Bhima Deva	...	1175—1202
Rajarajesvara Deva	...	1202—1237
Languliya Narsimha Deva	...	1237—1282

**Mys. Ins.* S. S. 69.

†LASSEN, *Ind. Alt.* iv, 14:

‡PRINSEP'S *Useful Tables*. 267. The account there given in connection with Proli seems to coincide remarkably with some particulars contained in the Begur Stone. *Mys. Ins.* S. S. 113.

§ *Ib.* and Dr. Hunter's *Orissa II*, App. 197.

Of these kings Ananga Bhima Deva was one of the greatest of the rulers of Orissa. He made a survey of his whole kingdom, measuring it with reeds. He also built the present temple of Jagannath. Raja Narsinha Deva built the great Sun temple at Kanárák on the sea, the black pagoda, 'the most exquisite memorial of sun worship in India or perhaps in any country.'*

The line continued in power down to 1534, soon after which the country fell a prey to the Muhammadans; but the only kings that claim notice here are Purushottama Deva, ruling in 1479—1504, and Pratápa Rudra, 1504—1532. The former sought in marriage the daughter of the Conjeveram king, famed for her beauty. But on the ground of his performing the office of sweeper to Jagannath his suit was rejected. He therefore attacked Conjeveram and was at first repulsed. At length he captured it, and took the princess prisoner, whom he vowed in revenge should be married to a sweeper. The minister charged with the execution of this order kept the girl in concealment until the festival of Jagannath, at which the king was accustomed to sweep the ground before the god; and while he was engaged in that act, placed her beside him and they were married. The reign of Pratápa Rudra is remarkable for the reformation of the Vaishnava religion by the preaching of Chaitanya, whose views the king finally adopted; and Buddhism, to which he had previously inclined, was banished the country. Pratápa Rudra is said to have extended his conquests southwards as far as Cape Comorin and his name occurs in many local traditions in the east of Mysore.

Pallavas.—The Pallavas are an ancient line of kings regarding whom our information is very scanty, and such as we have, connecting them with some of the most remarkable ruins in the south, leads to the desire that more may be discovered.† They seem to have ruled the whole of the maritime region east of the Peninsula, known as the Northern Sarkars, from Kalingapatna down to Mahábalipur or the Seven Pagodas south of Madras near the mouth of the Palar. They were the possessors of Kánci or Conjeveram, and their dominions extended inland over Mysore as far certainly as the line of the two Pinákini or Pennar rivers. Northwards they included Dharanikota on the Krishna, near which have been discovered the magnificent Buddhist ruins of Amaravati,

*DR. HUNTER, *Orissa* I, 288—98; FERGUSON however now inclines to the opinion that it is really three centuries older. *Hist. Ind. Arch.* 426-7.

†They were most probably a Scythian race, says General CUNNINGHAM, *Arch. Rep.* III, 4.

so well known by the Elliot Marbles, and Dr. Fergusson's splendid work *Old grants*, but without a date, inform us that their country was called Vengi; and their capital is variously mentioned as Dharanikota,* Vengipura, Kalinganagara† and Palakkada.‡ Pallava inscriptions occur at Mamallepura or Seven Pagodas which are acknowledged to be older than the 7th century.§ I have met with one at Nandi and one at Goribidnur, both in the Kolar District. In the same District, near Srinivaspur, are two stone inscriptions of a Mahávali king, who may therefore also have been a Pallava.

Nothing definite has yet been discovered regarding the chronology of the Pallavas, except that they were a powerful line of rulers before the irruption of the Chalukyas (next to be mentioned) in the 4th century, and that they were weakened by repeated attacks from the Chalukyas and Cheras up to the 7th century, when the former, in 605, became masters of Vengi and later of Kanchi, while the latter, a century afterwards, occupied their possessions in Mysore.

Sálivahana, whose era used throughout the south of India dates from A. D. 78, is acknowledged to have ruled at Pratishthána, now known as Paithan on the Godavari. From him are said to have descended Mádhava Varmma, Kulaketana, Nilakantha and Mukunti Pallava. The last appears as the founder of the Pallava line, with his capital at Dharanikota, and is said to have been a son of Mahadeva (Siva) by a girl of the mountain tribe called Chensuara (Chensabaras.) ¶ He is placed in about the year 200, and is, according to local tradition, the king under whom was erected the splendid tope or *stúpa* at Amaravati, which is called on the spot the Dúpa Mogasála (or assembly hall) of Mukunti Maharaja.¶

Trilochana Pallava was ruling in the 4th century, when Jaya Simha surnamed Vijayáditya, of the Chálukya kula, invaded his territories, but failed to obtain a permanent footing. Jaya Simha seems to have lost his life in the attempt, for his queen, then pregnant, is described as flying after his death and taking refuge with a Brahman named Vishnu

*WILSON, *McK. Coll.* I CXX.

†PROF. EGGELING: *Ind. Ant.* III, 152.

‡MR. FLEET, *Ind. Ant.* V, 50.

§MAJOR CARR, *Seven Pagodas*; DR. BURNELL, *S. Ind. Pal.*, 29, 30.

¶WILSON, *McK. Coll.* I. CXXIV, CXXI.

¶FERGUSSON, *Tr. & Ser. Wor.* 171. The building is supposed to have been under erection from about A. D. 200 to 380; and the statements of the Buddhist pilgrim Hiouen Tsaang lead to the supposition that it was abandoned about 550.

Somayāji, in whose house she gave birth to a son named Raja Simha. On attaining to man's estate, he renewed the contest with the Pallavas, in which he was finally successful, cementing his power by a marriage with a princess of that race*. A Trinetra Pallava is said to have introduced Brahmans into his territory,† but as this event is placed 1100 years B. C. it may be dismissed as a fabrication.

Pallava inscriptions of about the 5th century ‡ give the names of Skanda Varma, Vira Varma, Skanda Varma, Vishnu Gopa Varma and Simha Varma. Also Rajendra Varma and his son Devendra Varma : and again Chanda Varma and Vijaya Nandi Varma. The capital at this time was Palakkadu (which suggests Pulicat.) On a temple at Mamallepura occurs the name of Ati Rana Chanda Pallava, who may be the same as the Chanda Varma above. There is also an Atyanta Kāma Pallesvara mentioned there, whose name appears to be Rana Jaya.

The Srinivaspur stones have the name Mahāvali Bānarasa,§ and the Nandi stone Nolambādhi Raja. After the Pallavas had lost their independence in the 7th century, as previously mentioned, traces of them appear as subordinates of the Chalukyas down to 1081, and they may have survived even to 1223.

Chalukyas.—The memorials of this powerful line are perhaps more abundant, exact and varied than those of any line of sovereigns in the south. Their first appearance south of the Nerbudda was in the 4th century, previous to which they are said to have had 59 predecessors on the throne of Ayodhya (Oudh). On entering the Dekhan they encountered the Kalachuryas, the Rattas, the Kadambas, and the Pallavas. The three first were reduced to the condition of feudatories, the Pallavas however drove off the invader, who was slain (as previously stated) but his successor defeated them and then formed with them an alliance cemented by a marriage with a Pallava princess. The Chālukya capital was established at Kalyāna, still known by that name, situated in Didar in the Nizam's Dominions, about a hundred miles west of Hyderabad; and their country was called Kuntala desa and Karnata desa.

*SIR WALTER ELLIOT, *Mad. J.* IV, 78.

†WILSON, *McK. Coll.* I. CXXIV, CXX.

‡*Ind. Ant.* III, 152; V. 50.

§Not stated to be Pallava, but this I conclude from the mention of Mahāvali

At the commencement of the 7th century the Chálukyas separated into two branches, of which the Eastern Chálukyas made Vengi, taken from the Pallavas, their capital. The Western Chálukyas, with whom chiefly Mysore is concerned, continued to rule from Kalyána. In the middle of the 8th century the Rattas appear to have regained an ascendancy, and the Chalukya power was for some time obscured: but at the end of the 10th century their authority was restored, and they reigned with increased glory to the middle of the 12th, when they were subverted by the Kalachuryas.

The Chálukyas were of the Soma vamsa or lunar line, and the Mánavyasa gotra. They claim to be the sons of Harita, nourished by the *Sapta mátrike* or seven mothers. The boar was the principal emblem on their signet, obtained from Bhagaván Nárāyaṇa (Vishnu), but their insignia included a peacock fan, an *ankusha* or elephant goad, a golden sceptre, and other symbols. The Western Chálukyas are styled the *Satyásraya kula*, from the name of the first king of this branch. The titles on their inscriptions, which are very numerous in Mysore, especially in the Nagar Division, are nearly invariably as follows—*Samastabhuvanásraya, Srí-prithvi-vallabha, Mahárájádhirájá, Paramesvara, Parama-bhaṭṭáraka, Satyásraya-kula-tilaka, Chálukyábharaṇa*.

The exact date of each king of the earlier period has not been definitely discovered; but the following, based upon authentic records*, is the most probable order.†

	Period	A. D.
Jaya Simha		
Budilha Varmma, Raja Simha or Rana Rága		
Vijaya Raja or Vijayáditya	...	472
Pulakesi		489
Kirtti Varmma		
Mangalisa		566—578

Jaya Simha is said to have defeated and destroyed Krishna, the Raṭṭa Raja. He himself was however slain in an encounter with Trilochana Pallava. His queen, then pregnant, fled and took refuge with a Brahman called Vishnu Somayáji, in whose house she gave birth to Raja Simha. On growing up to man's estate he renewed the contest with the Pallavas, in which he was finally successful, and married a princess of that race. Pulakesi is described as a prince of great power,

* *J. Bo. Br. R. A. S.* x, 363; *Ind. Ant.* iii, 305; V, 68.

† I have a grant professing to be by a Chálukya king named Vira Nṇamba, and dated in 444 A. D. but its genuineness is not established.

who performed an asvamedha, and, mounted on his horse Chitrakánta, extended his conquests over the whole country from the Ganges to Ceylon. Kirtti Varmma is described as the axe to the Kadamba pillar, and Mangalisa as having like a thunderbolt smitten the power of the Kalachuryas.

Mangalisa was the younger brother of Kirtti Varmma, and attempted to establish his own son in the succession. But Satyásraya, the elder son of Kirtti Varmma, obtained the throne, about 585, and gave his name to the kings of this line who ruled from Kalyāṇa and are distinguished as the Western Chálukyas. His younger brother Vishnu Varddhana, surnamed Kubja, crooked or hunch-backed, conquered the city of Vengi, and making it his capital, founded in 605 the line of Eastern Chálukyas, who continued to rule the Rajamahendri country for more than four centuries.

The line of Western Chalukyas, from the separation, is as follows :—

	Period A. D.		Period A. D.
Satyásraya, Pulakesi	... 585	Vikramāditya	... 733—
Anura		Kirtti Varmma	
Aditya Varma		Kirtti Varmma	... 799
Vikramāditya	... 592	Taranga	
Vinayāditya, Satyásraya, or Yuddha		Bhama Raja	
Maha	... 680—695	Ayya, Kirtti Varmma	
Vijayāditya	... 695—733	Vijayāditya	

The first of these kings, Satyásraya, also called Pulakesi, defeated Harsha Varddhana, the king of Kanoj and the most powerful monarch in Northern India; whence he obtained the title of Paramesvara thenceforward borne by the Chálukya kings. His period is confirmed by the accounts of the Buddhist pilgrim Hiouen Tsang.* Of the two following

* For an interesting description of the great Buddhist ceremony called the cultivation of the field of happiness performed by Harsha Vardhana surnamed Silāditya which was witnessed by Hiouen Tsang, see WHEELER, *Hist. Ind.* III. 275-8.

This illustrious traveller appears to have passed through the Mysore on his journey from the Tamil to the Mahratta country, but mentions only one place visited by him on the way. Regarding its situation the most perplexing diversity of opinion prevails among oriental scholars.

From *Kien-chi-pu-to* (Kāñchīpura), the capital of *Tu-lo-pi-cha* (Drāvida), the pilgrim travelled 2,000 *li* north-west to *Kong-kien-na-pu-to* (Konkanapura), and thence 2,400 to 2,500 *li*, in the same direction, to *Mo-ho-la-cia* (Mahārāshtra).

H. H. Wilson says (*J. R. A. S. xvii*, 131.) the distance will bring us into the Bijapur district.

General Cunningham remarks (*Anc. Geog. Ind.* i, 552) that both the bearing and distance point to Anegundi. M. Vivien de Saint-Martin has suggested Banavasi, but the distance is rather too great, and the subsequent leaving to the capital of Maharashtra would be almost due north instead of north-west. The kingdom (*royaume de Kankana-pura*) is described by Hiouen Tsang as 5,000 *li* in circuit, and bounded south by Dravida, east by Dhanakakota (Dharani kota), north by Maharashtra and west by the sea; which General Cunningham interprets as "extending along the coast from Vingeria to Kunlapur near Bednur, and inland from the neighbourhood of Kullarga to the ancient fortress of Madgiri. This was the ancient kingdom of the Kalambas. Hamilton states that the name of the country is pronounced Kōkan by the natives, which suggests its identification with the people called Coconke by Pliny, who occupied a middle position in the route from the south of India towards the north of the Indus."

names it is doubtful whether they were reigning kings. The next four reigns were marked by severe struggles with the Pallavas and other southern powers. The first Vikramāditya is said to have taken Kanchi from the Pallavas, and Vinayāditya to have destroyed the power of Trairāja Pallava. It was some time under the succeeding kings that the Rāṭṭas appear to have gained the upper hand, and, probably about 898, the Chālukya prince was forced to flee to Rajputana. This was the time when the Cholas, having subdued the Cheras, overran the greater part of Mysore and made head against the Eastern Chālukyas, events which doubtless encouraged the feudatories of the Western branch to revolt.

The fugitive king of Kalyāna, named Jaya Simha (which must have been the second name of one of those in the above list), repaired to Anhalvara in Gujarat, the court of Bhoja Raja, the last of the Chawuras or Sauras. There his son Moolraj married the daughter of Bhoja Raja, and in 931 succeeded the latter on the throne, the Salic law being set aside in his favour.* He ruled at Anhalvara for the space of 58 years, and his descendants occupied the throne with great glory till 1145.

Meanwhile Tailapa defeated the Rāṭṭas and retrieved the Chālukya fortunes. He ascended the throne at Kalyāna in 973, and transmitted to his posterity a kingdom which increased in splendour and prosperity

Mr. Fergusson (*J. R. A. S.* vi. 267) objects to the identification of Kanchipura here with Conjeeveram, for, according to Houei-li, "La ville de Kant-chipoura est située sur un port de la mer." He therefore considers that Nagapatam is meant and proceeds,—“From Nagapatam the first stage would take us to the centre of the Mysore plateau, somewhere east of Bednore, and about Holalkaira, or even a little further eastward.” He subsequently adds (*ib.* 396) “It has occurred to me that Konkānapura has nothing whatever to do with the Concan now below the Ghats, as I was inclined to think possible, but may have been the capital of the Kengu desa or Chera kingdom.”

Dr. Burnell writes (*S. Ind. Pal.* 27) “Houen Tsiang does not mention the Chera kingdom, but under the name of the kingdom of Konkānapura, the present Konkāna-halli, he describes a part of it.” From the map given, it appears that by “the present Konkānahalli” is meant Kānkān-halli in the south of the Bangalore District. As regards this identification, which is evidently based upon the presumed similarity of names, I would only remark that although the derivation of the name Kānkānhalli is uncertain (see Vol. II. 68), its form was undoubtedly the same as at present two hundred years ago, or in the time of Jagadeva Kāyal, nor is there any evidence that it was ever called Konkāna-halli. Moreover, if Houen Tsiang’s distances bring us either to Anegundi, or to a point between Bednur and Holalkere, according to the views above quoted, how can they be reconciled with the situation of Kānkānhalli?

It seems almost useless to add another guess, but it strikes me that Balgāmi (Bāligāṃve) in the north of the Shimoga District (14° 24′ north latitude 75° 18′ east longitude) might, except in name, answer the conditions. It was the capital of the Banavase nād or Kākumbā kingdom, and the most famous city in Mysore under the Chālukyas. What is more, it contained a Baud-dhāraya as late as the 12th century which I have not seen stated of any other place.

The only other ancient cities in the north west of Mysore were at Kulatur (Kuntala-nagara), Huncha, Niryunda and Heggere (for all which, see Vol. II.)

* Ton. *An. Raj.* I, 89.

under each succeeding reign for nearly two hundred years. The following is the list of kings from Tailapa :—

	Period A. D.
Tailapa, Taila, or Núrmaḍi Taila	973—997
Satyásraya, Sattimanta, Irivi Bhujanga or Ahava Malla ...	997—1008
Vikramáḍitya, Vikrama, Vibhu Vikrama or Núrmaḍi ...	1008—1018
Jaya Simha or Jagadeka Malla	1018—1040
Somesvara, Trailokya Malla, or Ahava Malla... ..	1040—1069
Somesvara, Soma, Sovi, Sovyi or Bhuvaneka Malla ...	1069—1076
Vikramáḍitya, Kali Vikrama, Vikramánka, Permaḍi, or Tribhuvana Malla	1076—1127
Somesvara, Soma, or Bhuloka Malla	1127—1133
Permma, or Jagadeka Malla	1133—1150
Tailapa, Núrmaḍi Taila, Núrmaḍi Tailapa, or Trailokya Malla	1150—1182
Somesvara or Tribhuvana Malla	1182—1189

The earlier of these kings were frequently engaged in war with the Cholas, who seem to have been their most formidable opponents in the south. Jaya Simha or Jagadeka Malla appears to have gained some advantages over them, which led to a formidable invasion by the Cholas in the reign of his son Somesvara. But the latter, having the titles Trailokya Malla and Ahava Malla, inflicted a signal defeat upon the enemy. His son, named Vishnu Varddhana or Vijayáḍitya, who calls himself the Vengi mandalesvara, was governor of Nolambaváḍi, the Chital-droog District, in 1066.* Bhuvaneka Malla was apparently a weak prince, and did not long retain possession of the crown.

He was expelled in 1076 by his brother Vikrama, who usurped the kingdom and became the most powerful of the Chálukya monarchs. He set aside† the ancient era of Salivahana, and from his accession established the Chálukya Vikrama era, which continued in use as long as the Chálukyās were in power. Several interesting particulars regarding him are contained in Bilhana's *Vikramánka Dera Charita*, one of the manuscripts lately discovered by Dr. Bühler.

Previous to his accession to the throne, he had gained so many important victories, chiefly against the Cholas and other powers south of the Tungabhadra, that his brother, moved by jealousy, sent forces into the Banavasi country (the Shimoga District) to seize him; but Vikrama destroyed them. He seems however to have taken the precaution of strengthening himself by alliances. For he married his daughter to Jayakesi, king of the Kadambas, whose capital was then at Goa; and formed a friendship with his former enemy the Chola raja,

* *Mys. Ins.* S. S. 11.

† Literally *rubbed it out*, as figures are swept out of the sand by school boys.

which was cemented by his marriage with the Chola princess. The Chola king died soon after, and his kingdom was thrown into a state of anarchy. On hearing this, Vikrama, who was still tarrying on the Tungabhadra, at once started for the south, in order to place his wife's brother on the throne. He entered Kanchi and put down the rebels there, then destroyed the enemy throughout Gangakunḍa, and re-established the Chola power.

But not long after his return he learned that his brother-in-law had lost his life in a fresh rebellion, and that Rājiga, the lord of Vengi, had taken possession of the throne of Kanchi. Vikrama at once prepared to march himself against the usurper, but the latter opened negotiations with Somesvara at Kalyāṇa, who, thinking a favourable opportunity had offered itself for the destruction of his hated brother, eagerly entered into the alliance. He followed so closely on Vikrama's march to the south, that when the latter came up with Rājiga's army Somesvara's forces were encamped not far off in his rear. A terrible battle ensued, in which victory declared for Vikrama : Rājiga fled, and Somesvara was taken prisoner. This was in 1076.

Vikrama placed his younger brother Jaya Simha in the government of Banavase and repaired to Kalyāṇa. He there heard that a *svayamvara* was proclaimed for Chandralekha or Chandala Devi, daughter of the Silahara prince of Karahūṭa, and possessed of marvellous beauty. He also ascertained that the lady on hearing of his valiant exploits had fallen in love with him, and therefore hastened to the festival, where he was chosen as the bridegroom from among the assembled princes of Ayodhya, Chedi, Kanyakubja, Kalinjara, Malava, Gurjara, &c., who, though filled with anger at the result, were restrained from violence through fear of the great Chālukya.

Next year his brother Jaya Simha rebelled, and collecting a large army advanced to the Krishna. Vikrama being forced in self defence to take the field against him, a battle was fought, in which Jaya Simha was defeated and taken prisoner. It was on this occasion that the Kadambas were made governors of Banavase, their ancestral kingdom.

The remainder of Vikrama's reign seems to have been peaceful, with the exception of an expedition in 1081 against Kanchi and the Pallavas, and one north of the Nerbudda in 1088. But towards the close he was invaded by the Hoysala Ballāla king, who was driven back by his general Achyugi Deva.

Of the successors of Vikrama not much remains to be said. Jagadeka Malla is stated to have ruled over the Pallava kingdom, from which he had driven the king. Under Nurmadi Taila, having the title of Trailokya Malla, the Chālukya dynasty, which had reached its zenith under the last Vikramaditya, began rapidly to decline. A powerful noble named Bijjala, of the Kalachurya race, had been appointed general

of the Chálukya armies, and the influence which he thereby obtained he turned against his sovereign, and expelled him from the throne. This event occurred in 1157. The Chálukya king retired south and maintained himself in the Banavase country. The religious feuds which raged at Kalyána in connection with the establishment of the Lingáyat creed kept the hands of the Kalachuryas fully occupied. The Chálukya influence therefore was not extinguished, and Somesvara, the last of his race, succeeded to the fallen fortunes of his house in 1182. What ultimately became of him does not appear, but the Hoysala Ballálas of Dorasamudra from the south, and the Yálavas of Devagiri from the north, soon closed in upon the disputed dominions; and the great and powerful Chálukya name disappears from history as that of a dominant power, though certain descendants of the line appear to have ruled in some parts of the Konkan till the middle of the 13th century.

Kalachuryas.—The Kalachuryas, or Kalabhuryas, were one of the royal houses subjected by the Chálukyas on their first arrival in the south. They were apparently connected with the Haihayas in descent, and are stated to have been the hereditary chiefs of the province of Kalyána. From an inscription at Harihara,* we learn that the founder of the line was named Krishna, and that he was born of a Brahmani girl by Siva. 'He slew in Kalanjara an evil spirit of a king who was a cannibal and followed the occupation of a barber; and taking possession of his kingdom, reduced the nine lakh country of Dahla mandala (Chedi or Bundelkhand) to obedience to his word, and ruled in peace.' Among the titles in their inscriptions, of which there are many in the north of Mysore, are the following:—lord of the city of Kalanjara, (the well known fortress in Bundelkhand), having the flag of a golden bull, Malla of the Shanivára Siddagiri durga.

Our history is concerned with the Kalachuryas from the time of Bijjala, who supplanted the Chálukyas in 1157, to 1182, when the line became extinct. The period, though short, is of considerable importance and interest from having seen the birth of the Lingáyat religion, which so largely prevails throughout the Kannaḍa speaking countries.

The following is the list of these kings:—

	Period A. D.
Bijjala, Bijjana, Nissanka Malla or Trilohvana Malla	1156—1165
Ráya Murári Sovi, Somesvara, Vira Vijala or Bhuvaneka Malla	1165—1176
Sinkama, Nissuka Malla or Ahava Malla	1176—1182

* *Mys. Ins.* S. S. 33.

Bijjala was a Jain. As has been related, he took advantage of his position as general of the Chálukya armies, and perhaps induced by carelessness or weakness in the sovereign, to usurp the throne. But for several years he did not assume the royal titles, and it appears as if he had formed an expectation of being recognized as a legitimate successor of the Chálukyās. It was not till the sixth year of his usurpation, or 1162, that he marched to the south, whither the Chálukya prince had retired, and then proclaimed himself supreme.

During his reign, Basava, the son of an Aradhya, came to settle in Kalyána, where he became the son-in-law of the chief minister. He had a very beautiful sister named Padmavati, whom Bijjala having seen became enamoured of and married. Basava thus in course of time was appointed chief minister and general. The Raja gave himself up to the charms of his beautiful bride and left all power in the hands of Basava, who employed the opportunity thus afforded him to strengthen his own influence, displacing the old officers of state and putting in adherents of his own, while at the same time he sedulously cultivated the favour of the prince. By these means, and the promulgation of a new faith, as will be elsewhere described, he increased rapidly in power.

At length Bijjala's fears were roused, and he made an attempt to seize Basava ; but the latter escaped, and afterwards dispersed the party sent in pursuit. His adherents flocked to him, and Bijjala, advancing in person to quell the insurrection, was defeated and compelled to reinstate the minister in all his dignities. Basava not only resumed his former power and authority, but formed a plot against the life of the king, probably in the hope of becoming supreme in the state as regent during the minority of his nephew, the son of Bijjala and Padmavati. Accounts differ as to the mode in which the king was killed. According to the Jain account, in the *Bijjalanka Kávyā*, he was poisoned on the banks of the Bhima when returning from a successful expedition against the Silahara chief of Kolapur : while the *Basava Purāna* of the Lingáyats states that he was assassinated by three of Basava's followers.

Ráya Murári Sóvi, the son of Bijjala, resolved to revenge his father's death, and Basava fled to Ulive or Vrishabhapura on the Malabar coast. Thither the king pursued him and laid siege to the place. It was reduced to extremity, and Basava in despair threw himself into a well and was drowned.

The southern territories of this short-lived dynasty were absorbed into the dominions of the Hoysala Ballālas, who had by this time risen to power in Mysore. Before tracing their history we may notice the connection of the Cholas with this country.

Cholas.—It has been related how about 894 Talkād was taken by a Chola king, and the Konga or Chera empire overthrown. That conquest is attributed to a Rajendra Chola, who seems to have overrun a great part of Mysore, until his progress northwards was checked by the Chālukyas.

The traces of the Cholas in Mysore do not extend west of the chain of hills running north and south through Sāvandurga and Sivaganga. Their influence was limited to less than 150 years from the conquest of Talkād, or to the complete establishment of the Hoysala power; for it is evident that they could have had no control in the country at the time when Rāmānujāchāri fled from the Chola kingdom to take refuge in the Ballāla territory. The following appear to be the Chola kings who exercised authority in the east of Mysore, but there is no certainty regarding either the names or dates.

	Period A. D.
Aditya Varma, Rajendra Chola	867—927
Vira Chola, Narayana Raya	927—977
Dasoditya Raya.	
Paranaka Raya, Hari Māli.	
Divya Raya or Deva Raja Chola.	
Harivari Deva, or Tribhuvana Vira Deva Chola	986—1023

Rajendra Chola was a celebrated monarch. He is described as victor over the Pāndyan and Chera princes and those of Utkala and Virāṭa. It was to him that the Tamil poet Kamban dedicated his Rāmāyana, whose date is given as 886.* Vira Chola is said to have conquered many countries, in alliance with the Pāndya king, and even to have made an expedition to Ceylon. He built the *Kanaka sabha* at Chidambaram. Divya Raya or Deva Raja Chola is said to have placed his minister in charge of the government at the capital of Tanjore, and then to have set forth on a career of conquest to the north, where he stayed a long time. Meantime disturbances broke out at Tanjore, which the minister was unable to put down, and the king, hearing of the state of affairs, returned and restored

* DR. CYLDWELL throws a doubt upon this date and considers the Rajendra Chola to whom the Tamil Ramayana was dedicated as a later monarch of that name who was defeated by the Chālukya king Ahava Malla about 1063. Kamban or Kamtar is also stated to be posterior to Rāmanujachāri. *Gram. Drav. Lang.* Intro. 136.

order. Raja Raja Chola or Rajendra Chola married into the eastern Chálukya family and succeeded to their kingdom in 1023, and was followed in 1064 by Kulottunga Chola.* Karikala Chola, the king who persecuted Rámánujáchari, reigned at the beginning of the 12th century.

Hoysala Ballalas.—This dynasty, which is perhaps the most essentially Mysorean of the ancient lines of kings included in our historical survey, ruled in this country with great glory from the beginning of the 10th to the middle of the 14th century. The earlier kings were Jains. They claim to be Yádavas and therefore of the lunar line.

The founder of the family, according to numerous inscriptions, was Sala, and the following is related as the exploit which raised him to a throne. He one day visited the temple of Vāsantika, situated in a forest near Sasakapura, and while engaged in worship of the goddess and of the *yati* seated near her image, a dreadful roar was heard and a tiger bounded out of the jungle, glaring with rage. The yati hastily snatching up a *salúki*,—a slender iron rod—gave it to the chief, saying in the Karnátaka language *Hoysi, Sale ! Strike, Sala !* On which the latter discharged the weapon with such force at the tiger as to kill him on the spot. This event was so remarkable that in order to commemorate it he adopted the tiger (*sháridíla*) as his crest, and assumed the name of Hoysala,† formed from the words of the yati's exclamation. The kings of this line were therefore designated Hoysalas, and had a tiger on their flag.

A narrative in the McKenzie Mss. states, that this tiger had committed such ravages in the neighbourhood that the people were afraid to assemble for the annual festival of Vāsantika. Being now freed from the scourge by the valour of Sala, they gladly agreed, at the instance of the yati, to pay a contribution to their deliverer of one fanam (4 as. 8 p.) a year for each family. This seemed so trifling a reward for the important service rendered, that the second year it was doubled, the third year trebled and so on for five years. Hoysala had faithfully placed what he received each year at the yati's feet, and in the second year had been ordered to use the money in raising a small force. This having been increased by the end of the fifth year to a respectable number, Hoysala was directed to rebuild the ruined city of Devarapuri (? Dwárapuri) and

* DR. BURNELL, *S. Ind. Pal.* 20.

† Also in Hále Kannaḍa written Poysala, sometimes Hoysana or Poysana.

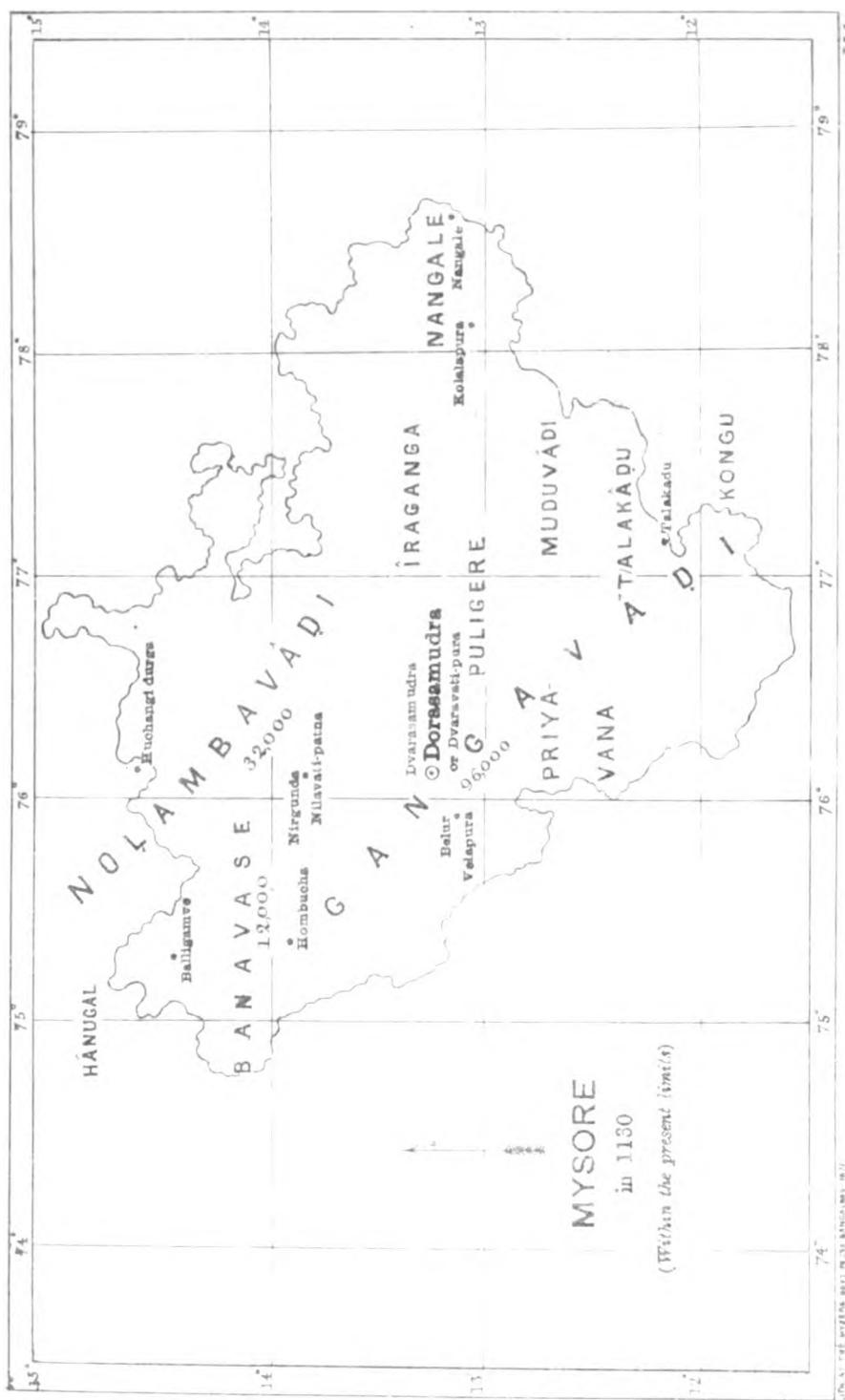
informed that he would discover a large treasure for the purpose among the ruins, to be applied to fortifying it.

It is not easy to determine the localities above referred to. *Sasakapura*, hare town, would be in Kannada *Mol-úr*, but we have previously identified the *Molur* near Channapatna with *Mugunda-patna*, and the incident of a hare turning on the hounds is so generally referred to throughout Mysore as the reason for the foundation of forts, that this name affords a very slight clue. *Devarapura* or *Dwárapura* may be the *Dvárávatipura*, *Dvárásamudra* or *Dorasamudra* of which the Hoysalas claim to be lords, and which was their capital.

The following is the list of the kings of this line, with the dates obtained from the sources indicated. There is not a particle of evidence for the list given in Buchanan, II, 533.

Inscriptions.		Chenna Basavana Kalajñána.	Kongu Desa Itájakal.
	Sala, Hoysala	984—1043	
..1039—1047..	Vinayáditya	1043—1073	—1068.
	Yereyanga, Pereyanga, Vira Ganga	1073—1114	
..1117—1138..	Bitti Deva, Vishnu Vardhana, Trilohvana Malla,	1114—1145	..1099—1147
..1142—1191	Vijaya Narasimha, Vira Narasinha	1145—1188	1147—1174
..1191—1207..	Vira Ballála	1188—1233	1174—
..1223	Vira Narasimha	1233—1249	—1237
	Soma, Vira Somesvara	1249—1268	1237—1283
..1262—1287..	Vira Narasinha	1268—1308	1283—1313

The ancestors of Hoysala were perhaps in some subordinate position under the previous kings ; one inscription, in tracing their descent, calls them the rajas of Gangavádi, and this 96,000 province certainly formed their earliest possession. Though its situation has not been exactly identified, it probably embraced the south and centre of Mysore. Vinayáditya apparently succeeded to the government, but two inscriptions introduce Kari as the son of Sala, and make Vinayáditya the grandson. The latter resided at Sosolya, perhaps Sosile, on the Kaveri opposite the point where the Kabbani enters it. His wife was Keleyala Devi. Their son Ereyanga, Yereyanga or Pereyanga, is stated to have gained possession of Talkád and of Ganga Rájya, being the first to rule them. He married Achala Devi, and by her had three sons, Ballála, Bitti Deva, and Udayáditya. It is not clear whether Ballála came to the throne, but one inscription represents him as ruling at Belapura (Belur).



Bitṭi Deva, under his subsequent name of Vishnu Varddhana, is one of the most celebrated of this line of kings; being famed for the extent of his conquests and for his conversion from the Jain faith to that of Vishnu. After describing how he overthrew the Tulu and Haihaya kings, and like a garuḍa destroyed the serpent the Vengiri king; how he became possessor of Talakāḍ, subdued Kongu, and overcame Nolambavāḍi (the Chitaldroog District), gained possession of Kovatur (Coimbatore), sacked Toreyur, passed beyond Vallur (Vellore) and resided in Kanchipura (Conjeveram), an inscription mentions the following as the boundaries of his kingdom;—the lower ghat of Nangale on the east; Kongu, Cheram and Anemal on the south; the Barkanur ghat road of Konka náḍ on the west; and Sāvimale on the north.

According to another inscription—‘when the king Vishnu Varddhana had securely seated himself on the throne, he speedily possessed himself of the glory of all the kings as far as the ocean. Without stirring he acquired the whole of Male and all the Tulu country. On merely preparing to march, Marunāḍ and Talakāḍ came into his hands. On placing one foot forward Kanchi became his. Before he had once flourished his sword the Konga kings fled defeated. What valour was his! Who can depict the bravery of this king Vishnu, destroyer of the pride of arm of the Chola king, the Pāṇḍya king, and the Kerala king; a lion to the male elephant the Andhra king; a gale to the clouds the Lāṭa and Varāṭa kings; a consuming fire to the grove the warlike Kadamba kings.’

The list of provinces he ruled is given as—Talakāḍu, Kongu, Nangale, Gangavāḍi, Nolambavāḍi, Muduvāḍi, Puligere, Halasigere, Banavase, Hānugal, Nāḍugonḍa, Priyavana and Iraganga.* He is further said to hold in his arms the lady Earth, adorned with beautiful *kuntala*, and having an admired *maṭya*, with a charming *kānchi*.† He thus lays claim to the whole of Mysore, with parts of Coimbatore, Salem, Canara and other adjacent provinces, and to such an extent his dominion did no doubt reach. But they probably mark the utmost limits

* Talakāḍ is in the south-east of Mysore District; Kongu in Coimbatore and Salem Districts; Nangale in Kolar District; Gangavāḍi, probably the southern and central parts of Mysore; Nolambavāḍi in Chitaldroog District; Halasigere in Dharwar; Banavase and Hānugal in and beyond Shimoga District; Priyavana perhaps Periyapatna.

† Kuntala means either the Kuntala country or curly locks; Madya, either the middle region or the waist; Kānchi, either the city of that name or a zone or girdle. The forests and areca gardens of north-western Mysore are frequently compared in inscriptions to the tresses of the lady Earth, and the mountains to her swelling bosoms; while there is a frequent play upon the words Kuntala, her curls, and Kānchi, her zone, in describing the rivalry between the rulers of these two regions, the Chālukyas and the Pallavas.

within which he exercised any authority. For he was contemporary with the last Vikramāditya, the most powerful of the Chálukya monarchs, and they could not both have possessed the whole of Nolambavádi, Banavase and other provinces in that direction. But portions may have been in the power of each, whence easily follows an assertion of exclusive dominion on both sides. Vishnu Varddhana appears to have at first acknowledged the supremacy of the Chálukya, but afterwards attacked him, and, though unsuccessful at that time, gained the advantage in the next reign; the title of Tribhuvana Malla, perhaps originally adopted out of compliment, being then retained as a sovereign right.

Vishnu Varddhana's chief queen was Sútala Devi, and his residence was in Velapara or Bilar, the celebrated temple of which was founded by him. His conversion was effected by the Vaishnava reformer Rámanujáchári. The latter had fled from the Chola country, in order to escape that king's persecution of all who would not subscribe to the supremacy of Siva, and had taken refuge in the Ballála Kingdom. The circumstances under which the king was converted are differently related.

According to one account, the king's daughter was possessed, and none of the Jain adherents of the court being able to effect her cure, Ramanujachari undertook to do it, on condition that if he succeeded the king should acknowledge the superiority of the Vaishnava faith by embracing it. The evil spirit was cast out, and the king in consequence adopted the creed of the victorious apostle, who, further, in eighteen days of public disputation, refuted the Jains and convicted them of heresy. Those who did not, after this, give in their adhesion to the new faith, are said to have been ground to pieces in oil mills.

Another version is, that the king had a Vaishnava wife, through whose influence he was persuaded to give shelter to the reformer. By instigation of the latter, she hinted to the king that the Jain priests were so haughty they would not even accept food at his hands. He was indignant at the idea, and resolved to put it to the proof. Now the king had lost a finger, and this mutilation would prevent the Jain priests from eating with him. When, therefore, he found himself dishonoured by a refusal of his invitation, he went over in resentment to the other side, and abandoned the Jains to persecution. Ramanujachari demolished nearly all the Jain temples at the capital, said to have been 720 in number, and used the stones in embanking the large tank.

The succeeding kings all professed either the Vaishnava or the Saiva creed, but there seems to have been much religious toleration in their reigns, and the Jains were often recipients of the royal favour. They were probably too numerous and influential to be entirely ignored.

Several important works of public utility were constructed in this reign, such as the Maddur anekat on the Shimsha, and especially the one on the Kávéri near Talkad, called, after the minister, the Mádhava Mantri. Some important change in the mode of levying the land assessment seems implied in the following story:—

An indigent Brahman named Vishnu S'arma, a very holy man, was advised to go to the Chandra Drona (Baba Budan) mountains and there perform penance in honour of Siva. After he had been for some time engaged in these austerities, Siva appeared; and taking pity on the distress of his worshipper, brought out from a cave a brass vessel full of *siddha rasa*, and explaining to him how it would convert iron into gold, vanished. The poor man, delighted, went to the capital with his treasure tied up in a bundle, and while preparing his meals, left it for safety in a blacksmith's shop. But the heat of the forge caused the substance to melt, and a drop or two falling out on some iron converted it at once to gold. The blacksmith and his family thereupon examined the bundle, and discovering what it contained, secretly removed it and set fire to the hut. When the Brahman returned to claim the bundle he was assured that everything had been most unfortunately burnt. But he made known the whole matter to the king, who ordered the blacksmith to be produced. The latter was beaten and tortured, but without effect, when the person in whose house the bundle had been concealed brought and laid it before the king, who ordered it to be at once restored to the owner. The Brahman, astonished at such generosity, made a present of it to the king, who in return gave him a valuable estate. Vishnu Varddhana, deeming himself now provided with the means of obtaining wealth to any extent, sent for all the farmers and informed them that instead of the usual assessment he should only require them in future to deliver up to him annually their old plough shares, and on this condition they might cultivate to any extent. (The well, it is said, is still pointed out into which the plough shares used to be cast!)

Vishnu Varddhana was succeeded by his son Vira Narasimha, whose queen was Achala Devi. Their son, Vira Ballála, even surpassed Vishnu Varddhana in the glory of his reign and the extent of his conquests. His reign began in 1191. He gained important victories to the north, and carried the Ballála kingdom up to and beyond the Krishna. His general defeated the Kalachurya general, capturing 60 elephants. Vira Ballála, after this, made Lokigonda (Lakkundi in Dharwar) his residence for some time, and here a great battle took place between him and Ballam Deva, the founder of the Devagiri line, next to be mentioned, in which the former was victorious. At another time he defeated an immense army

sent against him by the Devagiri prince, probably Jayatuga Deva, under the command of his general Soma.

An inscription at Harihara states that—though Somana nripa was accompanied by 200,000 troops, besides 12,000 horse and numerous mounted chieftains, all regarding him affection; Vira Ballála Ráya, on his single elephant, routing that immense army, pursued Soma, and stopping him between Sovaturu and Krishna veni, there slew him. Then, escaping the hostile chiefs, who, with fury singling him out, came to fall upon him; when he had halted and reformed the pursuing army, he marched to Viráta kōṭe, and speedily laid siege to the hill forts within Belliṭṭe, Rattapalli, Sovaturu and Kurugoda.

The influence of the Ballálas north of the Tungabhadra seems to have declined in the subsequent reigns, and the Yálavas of Devagiri made good their conquest of most of the old Chálukya kingdom; and by the time of Ramachandra Deva, whose general is stated to have taken Dorasamudra, had obtained a footing in the north of Mysore.

Narasimha, the son of Ballála by Padmala Devi, succeeded his father. His army was chiefly employed in the south. He is described as ‘churning with the Mandara mountain of his powerful right arm, the ocean of the Kadava army into which the Pándya alligator had plunged, and thus acquiring numerous elephants of great strength’. He overthrew, it is said, the Kadava raya, Makara, the Pandya king and others, and gave the crown to Chola. Whatever the incident referred to may have been, the Hoysalas claim in their later inscriptions to be ‘thrusters out of the Pándya Ráya, and setters up of the Chola Ráya.’ Narasimha’s grandeur is thus described.

When he went forth seated in a splendid howdah on his caparisoned elephant, and the bravest of the brave,—the lotus of their jewelled heads swaying before its gold-covered shoulder,—addressed him as *Bhala!* (well done), *Jagadeka Vira!* (sole champion of the world), *Marul-deva!* (god of the gods), *Purbápurba Deva!* (the ancient and modern god), *Naráyana! Narasinga!*—the waving of the banners at the top appeared as if nodding in token of approval.

Vira Someswara is described as the founder of Dorasamudra, from which we are probably to understand that he rebuilt it, and in this reign were doubtless commenced the elaborately ornate temples which have given Halebid, the old ruins of Dorasamudra, so wide a celebrity. The reason given by tradition for the erection of these splendid works of art will be found in the account of Halebid. With Narasimha, the son of

Somesvara, was brought to an end the power of the Hoysala dynasty. To account for its destruction the following story is related.

The king's sister had been married to the Jinji raja, but was now a widow. She therefore came on a visit to her brother, accompanied by her two sons, Lakkana and Virana, who were very handsome young men. One of the king's wives conceived a guilty passion for them, but her advances being alike repelled by each in turn, her love changed to hate, and she denounced them to the king as having made overtures to her. The king, justly enraged, ordered them to be at once impaled, and their bodies exposed like those of common malefactors at one of the city gates. Hearing what had happened, their unfortunate mother hastened to the palace to demand an inquiry and justice. But it was too late, the fatal order had been executed, and she was not only put out of the palace, but the inhabitants were forbidden to give her any assistance. In the agony of despair she wandered from street to street, invoking the vengeance of the Almighty on her brother and predicting the speedy downfall of his empire. Arriving at the potters' street worn with fatigue and sorrow, she requested and received a draught of water, in return for which act of kindness she declared that in the destruction of the capital that street should be spared. It is the only one that has survived.

In 1310 the Ballála dominions were invaded by a Muhammadan army under Káfur, the general of Ala ud Din the second king of the house of Khilji or second Pathan dynasty. A great battle was fought, in which the Ballála king was defeated and taken prisoner. Dorasamudra was sacked, and the enemy returned to Delhi literally loaded with gold. Another expedition, sent by Muhammad III of the house of Tughlak in 1326, completely demolished the city. After the first defeat the seat of government seems to have been removed to Belur, the king now retired to Tondanur (Tonnur), 9 miles north of Seringapatam, at the foot of the Yádava hills. He is said to have borne the name of Vishnu Varddhana, but this was probably only a title. Thus ended the rule of this powerful line, consisting of nine princes, and thence called the Nava Ballála; which, from a very small beginning, had, by the valour of its several members, subdued the whole of Karnataka up to the Krishna, with Tuluva on the west, Dravida on the east, and part of Telingana on the north-east.

Yadavas.—This line of kings arose in the northern part of the old Chálukya kingdom, the founder being contemporary with Vira Ballála of the Hoysala line. They overcame the Kalachuryas and became masters

of all the Western Dekhan, having their capital at Devagiri, the ancient Tagara, and now known as Daulatabad. From their styling themselves lords of Dváravati-pura, which is one of the titles of the Hoysala Ballálas, whose capital the city continued to be during the whole time of their power, it is conjectured that these Yádavas were a branch of the Ballálas. Their standard bore the device of a golden garuḍa, and the fourth king styles himself 'the thruster out of the Hoysala Ráyas, the restorer of the Telunga Ráya'. The following is the list of the kings :—

					Period A. D.
Ballam, Bhíllama, ...	...	...	...	...	1188—1193.
Jaytuga, Jaitugi, Jaitpala	...	...	...	...	1193—1210.
Simhana, Singhana ...	...	...	...	...	1210—1248.
Kanlara, Kanhara, Krishna	...	...	...	...	1248—1260.
Mahadeva ...	...	...	...	...	1260—1271.
Ramachandra, Sri Rama	...	...	...	...	1271—1310.
Shankara ...	...	...	...	...	1310—1312.

We have already referred to the severe struggles that took place between the Hoysala and Yádava armies for the possession of the Chálukya dominions, and how Vira Ballála carried his conquests up to and beyond the Krishna. Later, the Yádavas gained the advantage, and the Ballálas were forced to retire to the south of the Tungabhadra. An inscription of Simhana Deva occurs at Balgami in Shimoga District, and this prince probably took advantage of Vira Ballála's death to extend his power to the south. But in the time of Ramachandra, a part of the north of Mysore was completely in their possession, with the seat of government established at Bettur in the Chitaldroog District. Sáluva Tikkama, the general of Rama, is said, in an inscription at Harihar, to have captured Dorasamudra and obtained thence a tribute of all manner of wealth, especially of horses and elephants. That he made a victorious expedition to the south is probable but whether it extended so far may be questioned.

It was in the time of Ramachandra that the Muhammadans first appeared in the Dekhan. Ala ud Din, nephew of Jalál-ud-Din Khilji the founder of the second Pathan dynasty, resolved in 1294 to attempt the conquest of the Dekhan, and in order to throw the enemy off their guard, pretended to leave his uncle in disgust. Suddenly changing his course to the west, he appeared before Devagiri. The Raja was quite unprepared, but hastily collected a small army, and after vainly trying to oppose the enemy near the city, retired to the fort, carrying in a great quantity of sacks, belonging to passing traders, believed

to contain grain but really filled with salt. Ala ud Din plundered the town, levying heavy contributions on the merchants and besieged the fort. He at the same time gave out that a larger army was following, and thus induced Rama Deva to offer 50 maunds of gold to buy him off. Meanwhile, the Raja's son Shankara Deva arrived with a large force and, contrary to his father's advice, attacked the Muhammadans. Though successful at first, he was defeated. Ala ud Din now raised his demands, but the contest might have been prolonged had not the troops in the fort discovered to their surprise that their provision was salt and not grain. At last it was agreed that the enemy should retire on receipt of 600 maunds of pearls, 2 of jewels, 1,000 of silver, 4,000 pieces of silk, &c. &c., besides an annual tribute to be sent to Delhi.

How the aged Jalal ud Din came forth to welcome his victorious nephew, and how the latter with the basest treachery assassinated him while making professions of attachment, are matters of history. Ala ud Din, seated on the throne, again sent an expedition in 1306 against Devagiri, which had withheld the promised tribute. It was commanded by Malik Káfur, surnamed Hazár Dinári,* a eunuch. He had been the slave of a merchant, and taken prisoner in the conquest of Gujarat ; but having attracted the king's notice, was speedily raised to the highest offices in the state.

Kafur overran the whole country, and Rama Deva finding resistance hopeless, submitted and offered to go to Delhi. He was there received with distinction and restored to his kingdom with additional honours, which kept him faithful during the rest of his life. In this expedition occurred an incident deserving to be mentioned. On the conquest of Gujarat, that raja's wife Kaula Devi had been taken captive, and being admitted to Ala ud Din's harem, by her beauty and talents gained his favour. She had charged the commander during this expedition to recover her daughter by the Gujarat raja, who had been long sought in marriage by Shankara, the son of Rama Deva, but refused as she was a Rajput. Now however the Gujarat raja in his exile had consented, and sent her under an escort to Devagiri. No clue could be gained as to where she was, when a party from the camp going to see the caves of Ellora, by chance fell in with the escort. They were forced to fight in self defence, and captured the princess. But it was not till afterwards

* A thousand *dinars*, that being the price for which he had been bought as a slave.

they knew the value of the prize. The girl was carried off to Delhi, where the king's son, Khizr Khan, being brought up with her, became enamoured of her and ultimately married her. Their loves are the subject of a celebrated Persian poem by Amir Khusrū.

In 1309, the army under Malik Kafur passed through Devagiri on its way to the conquest of Warangal, and was hospitably entertained by Rama Deva. But the following year Shankara Deva came to the throne, and the army being on its way to the conquest of Dorasamudra he was less friendly. Soon after, he withheld the tribute, on which Kafur a fourth time marched into the Dekhan, in 1312, seized Shankara Deva, put him to death, and took up his own residence in Devagiri.

In 1316 Haripála, the son-in-law of Rama Deva, in common with many of the conquered princes, raised the standard of revolt in the Dekhan and recovered their possessions, expelling the Muhamadan governors. The paroxysms of rage into which Ala ud Din was thrown by this intelligence brought on his death, hastened it is said by poison administered by Kafur. The latter attempted to place himself next on the throne, but he was assassinated, and Mubarak succeeded. In 1318 he marched into the Dekhan, took Haripála prisoner, and ordered him to be flayed alive and his head put up over the gate of his own capital. Thus ended the line of the Yádavas of Devagiri, and in 1338 Muhammad Toghlak removed the capital of his empire from Delhi to Devagiri, giving it the name of Daulatabad.

Vijayanagar.—The last great Hindu sovereignty of the south was founded in 1336, and brings us back, after a lapse of more than two thousand five hundred years, to the site of Kishkindha, whose annals engaged our attention near the beginning of this historical survey. Though the details vary, all accounts attribute the origin of the Vijayanagar empire to two persons named Hakka and Bukka, assisted by the celebrated scholar Mádha, surnamed Vidyáranya or forest of learning.* Hakka and Bukka, of whom the former assumed the name of Harihara, were the sons of Sangama, described as a prince of the Yádava line and

* The capital was apparently called Vidyánagara (city of learning) at first, in honour of the sage Vidyáranya, who was chiefly instrumental in its foundation; but by a natural transition it passed ere long into Vijayanagara (city of victory), the Bijanagar of Muhammadan historians, and the Bisnagar of the French. It is also commonly known as Aneundi, properly the name of a village on the other side of the river, said to have been the capital of the Yavanas, regarding whom so little is known. Aneundi, a Kannada name meaning elephant pit, was translated into Sanskrit as Hastinapura and Hastinavati, which is the designation in the *Mata Bharata* of the capital of the Pándus near Delhi.

the lunar race. Mádhava was minister to Sangama. Nothing is known of the situation of Sangama's kingdom, but one inscription describes him as Sailanka-nátha, and his father's name appears to have been Kampa. The earliest of the inscriptions of the Vijayanagar kings are found in the north and west of Mysore. They may have descended from feudatories either of the Hoysala Ballúlas or of Pratápa Rudra of the Kákateya family.

Dorasamudra and Warangal, the respective capitals of Karnataka and Telingana, had fallen a prey at about the same time to the Muhammadans. But amid the general revolts occasioned by the rash measures of Muhammad Toghlak, the two brothers Harihara and Bukka took advantage of a period of public commotion to lay the foundation of a new state; to which they were moved by the sage Mádhava or Vidyaranya, who besides experience and talent may have brought pecuniary aid to the undertaking. He belonged to the school of Sankarácárya, and was the *jagat guru* of Sringeri (Kadur District), the members of which establishment, alarmed, as Wilson remarks, by the increasing numbers of the Jangamas and Jains, and the approach of the Muhammadans, may have contributed their wealth and influence to the aggrandisement of the sons of Sangama.*

The site selected for the new capital was a remarkable one, on the banks of the Pampa or Tungabhadra, where the ancient Kishkindha had stood. In the words of an inscription 'its rampart was Hemakuta, its moat the auspicious Tungabhadra, its guardian the world-protector Virupáksha, its ruler the great king of kings Harihara.' † The Vijayanagar sovereigns adopted the *varáha* or boar as the emblem on the royal signet,

* Mádhava succeeded to the pontifical throne of Sringeri in 1331, at the age of 36, and lived till 1386. He is generally supposed to be the brother of Sávana, the most celebrated commentator on the Vedas, but Dr. Burnell states that they were one and the same person. *Vamca Brahm.* pref. ix.

† The whole of the extensive site occupied by the ruins of Bijanagar on the south bank of the Tungabhadra, and of its suburb Anegundi on the northern bank, is occupied by great bare piles and bosses of granite and granitoid gneiss, separated by rocky defiles and narrow rugged valleys, encumbered by precipitated masses of rock. Some of the larger flat-bottomed valleys are irrigated by aqueducts from the river, and appear like so many verdant oases in this Arabian Petraea of Southern India. Indeed some parts of the wilderness of Sinai reminded me, but on a far grander scale, of this huddled assemblage of bare granite rocks on the banks of the Tungabhadra. The formation is the same; the scantiness of vegetation, the arid aspect of the bare rocks, and the green spots marking the presence of springs few and far between in the depths of the valleys, are features common to both localities.

The peaks, tors and logging stones of Bijanagar and Anegundi intent the horizon in picturesque confusion, and are scarcely to be distinguished from the more artificial ruins of the ancient Hindu metropolis of the Deccan, which are usually constructed with blocks quarried from their sides, and vie in grotesqueness of outline and massiveness of character with the alternate airiness and solidity exhibited by nature in the nicely poised logging stones and columnar piles, and in the walls of prodigious cuboidal blocks of granite, which often crest and top her massive domes and ridges in natural cyclopean masonry. NEWBOLD, *J. A. S. B.* xiv.

and their family god was Virupāksha, the name under which Siva was worshipped in a celebrated temple erected at the capital. Their grants are signed *Sri Virupāksha*.

The succession and dates of the Vijayanagar kings are much confused, and those traditionally handed down are almost entirely wrong. The following list is approximately correct, based on a large number of inscriptions which I have examined.

	Period A. D.
Harihara, Hakka, Hariyappa	1336—1350
Bukka, Vira Bukkanna	1350—1379
Harihara	1379—1401
Deva Raya, Vijaya Raya, Vijaya Bukka	1401—1451
Mallikārjuna, Vira Mallanna, Praudha Deva	1451—1465
Virupāksha	1465—1479
Narasa, Narasimha	1479—1487
Vira Narasimha, Immadi* Narsinga... ..	1487—1508
Krishna Raya	} 1508—1542
Achyuta Raya	
Sala Siva Raya (Rama Raja, regent, usur, s the throne till 1565.)	1542—1573
Sri Ranga Raya (Tirumala Raja, brother of Rama Raja, 1566—)	1574—1587
Vira Venkatapati	1587—

Sangama—‘the lady of whose brilliant fame was like an ornament of musk adorning the brow of a sky as dark as the shade of the *honget* tree’—by his wife Kāmāmbika had five sons, Harihara, Kampa or Shankara, Bukka, Marappa and Muddapa.† Harihara was the first ruler of Vijayanagar, and was succeeded by Bukka. Marappa conquered the Kadamba territories, and ruled as *yava rāj* or viceroy at Chandragutti (Shimoga District). What became of the others does not appear. Bukka Raya married Gaunāmbika, and had a son Harihara, who succeeded him on the throne. Harihara’s son was Deva Raya, whose queen was Mallayarve, and by her he had Vira Mallanna, perhaps the Mallikarjuna who succeeded him and who seems also to have borne the title of Praudha Deva. But Vira Pratāpa Praudha Deva are the epithets commonly applied to the Vijayanagar kings in inscriptions.

Their dominions up to this period seem to have been most extensive under Harihara and his son Deva Raya. The former is said to have ‘conquered Chola, Kerala and Pandya, besides by his victories causing the

* *Immadi*, Kan. = the second.

† The *pongamia glabra* or Indian berch.

‡ Another inscription says he had five sons by Shārada, the youngest of whom was named Hariyappa. Shāradamma is the name under which Sarasvati is worshipped as the tutelary goddess of Sringeri, which see.

days to appear ever cloudy to the Yavanis (the wives of the Muhammadans) through their blinding tears.' During these two reigns the greater part of Karnata and Telingana, with the coast of Canara, was under their sway. To the north, the simultaneous origin of the Bahmani kingdom prevented an extension of territory in that direction.

The rivalry between the Bahmani and Vijayanagar kingdoms led to a continual succession of wars and alliances between the two, many interesting details of which are recorded by Ferishta, but perhaps with too favourable a colouring, as might be expected, to the Muhammadan side of the picture.* Among the earliest incidents that passed between them the following is characteristic.

'One evening when the spring of the garden of mirth had infused the cheek of Muhammad Shah with the rosy tinge of delight, a band of musicians sung two verses of Amir Khusru in praise of kings, festivity and music. The sultan was delighted beyond measure, and commanded to give the performers a draft for a gratuity on the treasury of the roy of Beejanuggur' (a deliberate insult). The draft was signed and despatched. But 'the roy, haughty and proud of his independence, placed the presenter of the draft on an ass, and parading him through all the quarters of Beejanuggur, sent him back with every mark of contempt and derision.' War naturally followed. The raja captured the frontier fortress of Mudkal and put all the inhabitants to the sword, only one escaping to carry the tale. The sultan swore that he would not rest till he had slain a hundred thousand of the infidels. A series of engagements took place, in which the raja was worsted, and an indiscriminate massacre of men, women and children continued until the payment of the wretched draft was enforced. The cold blooded slaughter of hosts of helpless human beings for so paltry a provocation led the ambassadors of the raja to propose that in any future wars the lives of unarmed

* For convenience of reference the list of Bahmani sultans is here given :—

Hasan Gangu, Ala ud Din ...	...	1347	Firez ...	...	...	1397
Muhammad ...	...	1358	Ahmad ...	...	...	1422
Mujahid ...	...	1375	Ala ud Din ...	...	...	1435
Daud ...	...	1378	Humayun ...	...	...	1457
Mahmud ...	...	1378	Nizam ...	...	...	1461
Gheias ud Din ...	...	1377	Muhammad ...	...	...	1463
Shams ud Din ...	...	1397	Mahmud ...	...	...	1482

Hasan, the founder of the line, was a poor Afghan, a native of Delhi, who farmed a small piece of land belonging to a Brahman named Gangu, who was in favour at court. One day, while ploughing, Hasan accidentally found some hidden treasure against which the plough-share had struck, and at once informed his landlord of it. The latter was so struck by his tenant's honesty that he cast his horoscope, and foretold that he would one day be a king, requesting that when that should come to pass he might be made the minister. Hasan in honour of his patron took the name Gangu, and by the influence of the Brahman was advanced in various ways and appointed to a command with a jaghir. He became a marked man, and when the measures of Muhammad Toghlak led to a rebellion, his talents placed him at the head of the revolt. He finally succeeded in establishing himself as ruler of the Dekhan, and fixed his capital at Kulturga. He and his descendants styled themselves kings of the Bahmani (that is, Brahmani) dynasty, in gratitude to the Brahman who had first announced the fortune of their founder.

inhabitants and prisoners should always be spared. This merciful provision was agreed to and the rule long after observed.

Coming down later, to the time of Deva Raja and Firoz Shah, shortly after the latter ascended the throne an invasion of his territories was made by the Vijayanagar king on the south and by other enemies on the north. Firoz, on marching to encounter Deva Raja, found the Krishna so swollen with the rains that he could not cross in the face of the opposing army. At this juncture a *kūzi* offered to cross with a few friends and by some plot to assassinate either Deva Raja or his son, as he might find chance. He went, and joining himself to a party of dancing girls in the camp, obtained admission in the disguise of a woman to an entertainment given by the raja's son. While performing a dance with a dagger in each hand, he seized an opportunity to plunge them into the prince's breast. His accomplices extinguished the lights, and in the confusion and darkness all made their escape. The sultan, taking advantage of the alarm created in the Hindu camp, crossed with a select body of troops, and before sunrise was in a position to make an assault. The Hindus were panic stricken, and the raja, filled with grief, made no resistance, but securing the body of his son, fled with all his forces. A treaty was at last concluded, fixing the common boundary of the two powers, and Deva Raja paid a sum equal to forty lakhs of rupees for the ransom of the prisoners.

In 1406 another war took place, brought about as follows. 'There resided in the town of Mudkal a farmer, who was blessed with a daughter of such exquisite beauty that the Creator seemed to have united all his powers in making her perfect.' Hearing of her beauty and accomplishments, Deva Raja resolved to marry her, and sent valuable presents to her and her parents by a Brahman. The parents were overjoyed at such unexpected good fortune, and displaying the rich gifts before the girl, showered on her their congratulations. But the beautiful virgin, to their great astonishment, refused to receive the gifts, and observed 'that whoever entered the haram of Beejanuggur, was afterwards not permitted to see even her nearest relations and friends; and though they might be happy to sell her for worldly riches, yet she was too fond of her parents to submit to eternal absence from them even for all the splendour of the palace of Beejanuggur. This declaration was accompanied with affectionate tears which melted her parents; who, rather than use force, dismissed the Brahman with all his gifts, and he returned, chagrined and disappointed, to Beejanuggur.'

The royal lover now became mad for the possession of the girl, and resolved to obtain her by force. On the plea of making a tour, he went towards the Tungabhadra, which suddenly crossing with a select body of troops, he hastened by forced marches to Mudkal. In the excess of his passion he had

omitted to let the parents of the girl know the object of the expedition. They, therefore, in common with all the country, fled on the approach of the army to the most distant parts for shelter. Foiled in their object, the troops returned in disgust, and committed depredations in the country through which they passed. Firoz Shah resolved to be revenged for this inroad on his territories. Unable to effect anything against the rija's capital, he laid waste all the adjacent country, and the hostile camps remained in each other's presence for several months. At last a treaty was concluded, by which the raja was to give his daughter in marriage to the sultan, with the fort of Bankapur and a large sum of money.

'Preparations for celebrating the nuptials were made by both parties. For forty days communication was open between the city and the sultan's camp. Both sides of the road were lined with shops and booths, in which the jugglers, drolls, dancers and mimics of Karnataka displayed their feats and skill to amuse passengers.' The bridegroom sent valuable presents to Vijayanagar, from which, after the expiration of seven days, the bride was brought forth with a rich portion and offerings from the raja, to the sultan's camp. What followed is thus described by Ferishta.

'Dewul Roy having expressed a strong desire to see the sultan, Firoze Shaw, with great gallantry, agreed to visit him with his bride, as his father-in-law. A day being fixed, he with the bride proceeded to Beejanuggur. On the way he was met by Dewul Roy in great pomp. From the gate of the city to the palace, being a distance of nearly six miles, the road was spread with cloth of gold, velvet, sattin, and other rich stuffs. The two princes rode on horseback together, between ranks of beautiful boys and girls, who waved plates of gold and silver flowers over their heads as they advanced, and then threw them to be gathered by the populace. After this, the inhabitants of the city made offerings, both men and women, according to their rank. After passing through a square directly in the centre of the city, the relations of Dewul Roy, who had lined the streets in crowds, made their obeisance and offerings, and joined the cavalcade on foot, marching before the princes. Upon their arrival at the palace gate, the sultan and roy dismounted from their horses and ascended a splendid palanquin, set with valuable jewels, in which they were carried together to the apartments prepared for the reception of the bride and bridegroom; when Dewul Roy took his leave, and retired to his own palace. The sultan, after being treated with royal magnificence for three days, took his leave of the roy; who pressed upon him richer presents than before given, and attended him four miles on his way, when he returned to the city. Sultan Firoz Shaw was enraged at his not going with him to his camp, and said to Meer Fuzzul Oollah that he would one day have revenge

for the affront offered him by such neglect. This declaration being told to Dewul Roy, he made some insolent remarks, so that notwithstanding the connection of family their hatred was not calmed.' The girl who had been the innocent cause of the war was sent for and married to the sultan's son.

In 1417 there was war again, in which Deva Raja inflicted a severe defeat upon the sultan. A great slaughter of the Muhammadans followed, and the dominions of Bijapur were laid waste with all the treasured resentment of many years. These reverses killed Firoz Shah. Ahmed Shah, his successor, resolved to take revenge on the Hindus, who had now been driven back. He desolated the possessions of Vijayanagar, slaughtering women and children without mercy. Whenever the number of slain came to twenty thousand, he halted for three days and made a feast. The Hindus, in desperation, formed a plot against him, from which he escaped by a hair's breadth. Terms were then agreed to, and he retired to his own country, the capital of which he shortly removed from Kulbarga to Bidar, a hundred miles to the north.

The further progress of events in that country need be noticed only so far as to state that the Bahmani empire was dismembered at the end of the 15th century and broken up into the five states of Bijapur, Ahmadnagar, Golconda, Berar, and Bidar. The first of these, with which our history will be principally concerned, was founded in 1489.

To return to Vijayanagar, the following extracts from the interesting account by Abdul Razzak, who visited that capital as ambassador from Persia in 1441 during the reign of Deva Raya, give a lofty idea of the wealth and magnificence of the empire.

From our former relation and well-adjusted narrative, well-informed readers will have ascertained that the writer Abdu-r-razzak had arrived at the city of Bijanagar. There he saw a city exceedingly large and populous, and a king of great power and dominion, whose kingdom extended from the borders of Sarandip to those of Kulbarga, and from Bengal to Malibar, a space of more than 1,000 *parasangs*. The country is for the most part well cultivated and fertile, and about three hundred good seaports belong to it. There are more than 1,000 elephants, lofty as the hills and gigantic as demons. The army consists of eleven *lacs* of men. In the whole of Hindustan there is no *râi* more absolute than himself, under which denomination the kings of that country are known. The Brahmans are held by him in higher estimation than all other men.

The city of Bijânagar is such that eye has not seen nor ear heard of any place resembling it upon the whole earth. It is so built that it has seven

fortified walls, one within the other. Beyond the circuit of the outer wall there is an esplanade, extending for about fifty yards, in which stones are fixed near one another to the height of a man; one half buried firmly in the earth, and the other half rises above it, so that neither foot nor horse, however bold, can advance with facility near the outer wall. The fortress is in the form of a circle, situated on the top of a hill, and is made of stone and mortar, with strong gates, where guards are always posted, who are very diligent in the collection of taxes. . . .

The seventh fortress is placed in the centre of the others, in it is situated the palace of the king. From the northern gate of the outer fortress to the southern is a distance of two statute *parasangs*, and the same with respect to the distance between the eastern and western gates. Between the first, second and third walls, there are cultivated fields, gardens and houses. From the third to the seventh fortress, shops and bazars are closely crowded together. By the palace of the king there are four bazars, situated opposite to one another. That which lies to the north is the imperial palace or abode of the Rái. At the head of each bazar there is a lofty arcade and magnificent gallery, but the palace of the king is loftier than all of them. The bazars are very broad and long, so that the sellers of flowers, notwithstanding that they place high stands before their shops, are yet able to sell flowers from both sides. Sweet-scented flowers are always procurable fresh in that city, and they are considered as even necessary sustenance, seeing that without them they could not exist. The tradesmen of each separate guild or craft have their shops close to one another. The jewellers sell their rubies and pearls and diamonds and emeralds openly in the bazar....

This country is so well populated that it is impossible in a reasonable space to convey an idea of it. In the king's treasury there are chambers with excavations in them filled with molten gold, forming one mass. All the inhabitants of the country, whether high or low, even down to the artificers of the bazar, wear jewels and gilt ornaments in their ears and around their necks, arms, wrists and fingers.

With Narasa or Narsingha the line was changed. According to some accounts, Virupáksha having no issue, raised one of his slaves named Sinhama to the throne, who took the title of Praudha Deva and ruled four years. His son Vira Narasimha succeeded and ruled but two years, when he also being childless, gave his signet to his falconer Narasa. According to other accounts, Narasa was a powerful chief of Telingana, who possessed himself of the greater part of the Vijayanagar territory. But an inscription at Shimoga brings him from Tulava, and states that

he was of the Yadu line, of the family of Krishna Rava, and the son of Shekhara and Bukkama. His conquests extended over the whole of the south, and the foundation is attributed to him of Seringapatam as a capital.* By Tippákshi or Tippáji and Nágala Devi, he had two sons, Vira Narsimha and Krishna Raya, who in turn succeeded him.

This does not agree with the traditional account, according to which Krishna Raya was an illegitimate son, by Nágamba, a friend or attendant of the queen. He was so superior as a boy to Vira Narasimha that Tippámba, the mother of the latter, became jealous and prevailed on the king to have him put to death. But the prime minister concealed the prince, reporting that the orders had been obeyed. In his last illness the king was much afflicted for the death of his son, on which the minister produced the prince, and Krishna Deva was declared the heir and successor to the throne. Vira Narasimha, it is added, died of vexation on his brother being acknowledged Raja.

Krishna Raya was one of the most powerful and distinguished monarchs of the Vijayanagar line. About 1520, the Muhammadans sustained a severe defeat from his armies, in consequence of which a good understanding prevailed between the courts of Vijayanagar and Bijapur for a considerable period. He not only restored the kingdom to its former limits but extended them in every direction. He kept possession of all the country up to the Krishna; eastwards he captured Warangal and ascended to Cuttack, where he married the daughter of the raja as the bond of peace; while westwards his conquests extended up to Salsette. He was also a great patron of Sanskrit and Telugu literature. Eight distinguished poets, called the *ashṭa dig-gaja*, were maintained at his court.†

The Hindu traditions represent Krishna Raya as conducting his affairs both in peace and war in person. But they acknowledge that he owed much to the Brahman minister of his father, who had saved his life, and who continued to be his minister until his death, three years preceding that of the raja. His name was Timma Raja, the Hem raj of the Muhammadan historians. At no period probably in the history of the south did any of its political divisions equal in extent and power that of Vijayanagar in the reign of Krishna Raya. From this time for a long period we shall meet with continual anarchy and successive revolutions.

* *Mys. Ins.* T. S. 6.

† The principal one was named Appaya Dikshita.

Edoardo Barbessa, who travelled in India in 1516, describes the city of Vijayanagar as 'of great extent, highly populous, and the seat of an active commerce in country diamonds, rubies from Pegu, silks of China and Alexandria, and cinnabar, camphor, musk, pepper and sandal from Malabar.' The palaces of the king and his ministers, and the temples were 'stately buildings of stone,' but the dwellings of the common people were 'hovels of straw and mud.'

Krishna Raya's name is generally mentioned along with that of Achyuta Raya as if they were either the same person or joint sovereigns, and the grants by the latter run parallel with those of Krishna Raya throughout his reign. But according to the received account, Krishna Raya had no legitimate male issue, and Achyuta Raya, called indifferently his brother, cousin and nephew, was thus the nearest heir. The latter being absent at the time, Krishna Raya on his death bed placed an infant named Sada Siva on the throne, under the guardianship of his son-in-law Rama Raja, who was the son, as is supposed, of the deceased minister Timma Raja. But Achyuta soon returned and assumed the government, and on his death Sada Siva succeeded, under the control of Rama Raja as before arranged. Now Sada Siva is expressly stated* to be the son of Achyuta Raya, and the latter being identified with Krishna Raya all is clear. If on the other hand they were different individuals jointly ruling, Krishna Raya probably died first, and at his death acknowledged the son of Achyuta Raya as heir to the throne.

As long as Rama Raja was alive, Sada Siva was only the nominal sovereign, and little more than a tool in the hands of the minister. On one occasion it is stated that, aided by his maternal uncle and some of the nobles, he conspired against the minister, who was forced to resign, but allowed to live in the capital. Tirumala Raja, the uncle, then assumed the whole power, having it is said murdered the prince. If this were the case, several puppet rajas may have been successively set up under the name of Sada Siva Raya, for grants in that name continue down to 1570. Tirumala Raja conducted himself so tyrannically that the chiefs rose against him, but he called in the assistance of the Sultan Ibrahim Adil Shah and put them down. No sooner, however, had the Muhammadans retired, than the nobles, with Rama Raja at their head, again rebelled, and shut up the usurper in his palace; where, finding his fortunes desperate,

**Mys. Ins.* S. S. 192.

he destroyed himself. Rama Raja now seized the supreme power, and being an able and powerful ruler, not only established his influence over all the kingdoms of the south but made encroachments on the Muhammadan states which they were powerless to prevent, and on one occasion even assisted Bijapur against Ahmednagar. His arrogance however was the prelude to his ruin.

The four Muhammadan principalities of the Dekhan resolved to combine in an attack upon Vijayanagar, and in 1564 the allied armies of Bijapur, Golconda, Ahmednagar and Bidar assembled at Bijapur, prepared to march south. Rama Raja thought lightly of the impending danger, but took measures for the defence of his territory by sending his brother Tirumala Raja with a strong force to occupy the fords of the Krishna; another division followed under his brother Venkatádri, while he himself brought up the rear with the main body of the army. The enemy, on arriving at the river, found the defending force entrenched on the right bank, behind earthworks mounted with cannon, and in such a position as effectually to bar the passage of the river. As this was the only point where their troops could safely cross, the allies resolved by a feint to draw their opponents out of the position. They accordingly marched along the river as if to attempt a passage at a different point, and were followed on the other side by the Hindu army. But on the third night they suddenly decamped, and gaining the now undefended ford, succeeded in carrying over their whole army, and marched against Rama Raja. The latter, though surprised at their activity, was not alarmed, but summoned his brothers to join him.

The 25th of January 1565 saw the two armies confronting each other in battle array on the since memorable field of Talikota, about 10 miles south of the Krishna near Raichor. The Musalman right was commanded by Ali Adil Shah of Bijapur, the left by Ali Barid Shah of Bidar and Ibrahim Kutb Shah of Golconda, the centre by Husen Nizam Shah of Ahmadnagar. Rama Raja entrusted his left to his brother Tirumala Raja, his right to his other brother Venkatádri, and himself commanded in his centre. The allies guarded their front with a line of cannon fastened together with strong chains and ropes. The Hindu front was protected by a large number of war elephants, as well as cannon. The battle opened with rapid discharges of artillery and rockets from the Hindu side. A general action ensued, accompanied with great slaughter. The Hindu right and left drove back both wings of the Musalman allies,

but their centre was unbroken. At this moment, a war elephant, becoming ungovernable, rushed madly about and overturned the litter of Rama Raja. Taking advantage of the confusion, some Muhammadan gunners rushed in, and before he could recover himself, seized Rama Raja and carried him off. His head was instantly struck off and paraded on the point of a lance in sight of both armies. The Hindus, on seeing their leader was slain, gave up all for lost and fled in every direction, closely pursued by the enemy. The slaughter was immense, and the booty sufficient to enrich every private of the victorious army.* The sultans marched to Anegundi, the troops entered Vijayanagar, and plundered and destroyed the capital, committing all manner of excess.

This terrible and decisive defeat broke up the Vijayanagar empire, but the mutual jealousies of the allies prevented either of them enlarging his kingdom by appropriating any of the conquered territory. A year after the battle, Tirumala Raja, the brother of Rama Raja, returned to the capital. But he found the attempt to restore it hopeless, and in 1567 retired to Penukonda. Venkatádri, the other brother, established himself at Chandragiri.

Cæsar Frederike visited the city of Vijayanagar two years after the battle. He states that Ram Rai perished through the treachery of two Mussalman generals in his service, who turned against him in the middle of the battle. The Mussalmans spent six months in plundering the city, searching in all directions for buried money. The houses were still standing, but they were empty. The court had moved from Vijayanagar to Penkonda, which was eight days' journey to the south. The inhabitants had disappeared and gone elsewhere. The surrounding country was so infested with thieves that he was compelled to stay six months longer at Vijayanagar than he intended. When at last he set out for Goa, he was attacked every day, and had to pay a ransom on each occasion.

He thus describes the palace: 'I have seen many kings' courts yet have never seen anything to compare with the royal palace of Bijjanugger, which hath nine gates. First when you go into that part where the king lodged there are five great gates, kept by Captains and Soldiers. Within these are four lesser gates, which are kept by porters, and through these you enter into a very fair court at the end.' He describes the city as being 24 miles round, enclosing

* Such is Ferishta's account. The Hindu account says that the divisions of Kuth Shah and Nizam Shah were routed, and retreated in confusion, covered by the armies of Adil Shah and Barid Shah. The Hindus, considering the engagement over and the enemy annihilated, gave themselves up to rejoicing and festivity, and were surprised in their encampment.

several hills. The ordinary dwellings had earthen walls, but the three palaces and the pagodas were all built of fine marble.

Grants in the name of Sada Siva, the nominal sovereign, continued to be made as late as 1573. Sri Ranga, probably the son of Sada Siva, succeeded his father. The ninth in descent from him fled before the Mogul armies to Chandragiri, whence, from Sri Ranga Raya, the English obtained the grant of the settlement of Madras in 1640. Six years after, Chandragiri and Chingalput, his occasional residence and nominal capitals, being taken by the forces of Golcondah, he fled to the protection of Sivappa Náyak of Bednur, who gave him the government of Sakráy-patna. A member of the family, named Rama Raja, established himself at Anegundi, two miles from the ancient capital, and continued the line for seven generations, till 1776, when Tippu Sultan overran the whole country, dispossessed Timmappa the reigning chief, and burnt the town of Anegundi and its suburbs.

The Palegars.—During the 15th and 16th centuries, the Vijayanagar kings had bestowed on or confirmed to vassal chiefs, bearing various titles, sundry tracts in Mysore, on the condition of payment of tribute and the rendering of military service. Those in the northern parts were directly controlled from the capital. The southern chiefs were placed under a viceroy termed the Sri Ranga Ráyal, whose seat of government was at Seringapatam. After the dissolution of the empire which followed on the battle of Talikota, although a nominal allegiance continued to be paid to the representative of the State at Pengonda and to the viceroy at Seringapatam, such of the chiefs as had the power gradually broke loose of control and declared their independence. An account of each of these Pálegar families will be found in connection with the localities which formed their respective estates. It will be sufficient, therefore, here, to simply mention the more important. Among these were—in the north, the Náyaks of Bednur, Basavapatna and Chitaldroog; on the west, the Náyaks of Balam; in the centre, the Náyaks of Hágalyádi, and the Gaudas of Yelahanka and Ballapur; on the east, the Gauda of Sugatúr; on the south, the Wodeyars of Mysore, Kaḷale, Ummatur, Yelandur, and others.

In 1573 the Bijapur and Ahmadnagar rulers came to a mutual agreement to extend their conquests in such different directions as not to interfere with one another. The Bijapur line of conquest was to the

south. Adoni having been captured, and the western coast regions from Goa down to Barkalur overrun, an attempt was made in 1577 on Penkonda, whence Tirumala Ráya had transferred the seat of government to Chandragiri. But Penkonda found a most gallant defender in Jagadeva Ráya, whose daughter was married to Tirumala. Every attack was repelled, and the Bijapur army forced to raise the siege and retire. For this brilliant service Jagadeva was rewarded by the grant of a territory which extended across Mysore, from Baramahal—the previous possession of his family—on the east, to the Western Ghats on the west. He fixed his capital at Channapatna (Bangalore District). Kankanhalli and Nagamangala were two of the most important towns in his territory, which also included Periyapatna on the west and Harnhalli and Banawar on the north, while a long arm reached even to Hole Honnur.*

About the same period, Timme Gaúda of Sugatur rendered some important military service, for which he received the title of Chikka Ráya, with a grant of territory in the southern half of the Kolar District, including Hoskote westwards and Punganur eastwards.

Meanwhile, in the south, the Rajas of Mysore, whose history will be given in detail further on, had been gradually subduing all the lesser chiefs; until in 1610 they gained Seringapatam, ousting the effete viceroy of Vijayanagar, and became the dominant power in that part of the country. In 1630 they took Channapatna, and Jagadeva Ráya's dominions were thus absorbed into the Mysore State.

This brief sketch of the principal changes which took place in the seventy years following the battle of Talikota will serve to shew how matters stood, and the several divisions of the country, in 1636, when the Bijapur armies successfully invaded Mysore and established the government of that State over the Carnatic Balaghat.

Bijapur.—This State is more properly called Vijayapur, but as a Muhammadan kingdom, and to distinguish it from Vijayanagar, the Muhammadan form of the name has been retained. The founder of the kingdom was Yusuf Adil Shah, after whom his descendants were called the Adil Shahi kings. He is stated to have been a son of the Ottoman sultan Amurath or Murad, and brother of Muhammad the Great, the conqueror of Constantinople. On the accession of the latter to the Turkish throne in 1450, Yusuf, by the contrivance of his mother, escaped being

* I am inclined to think this territory may be found to pretty much correspond with the ancient province of Gangavádi, the 96,000 country.

put to death with the rest of his brothers and was by her means conveyed to Persia. Being obliged to fly from Persia at the age of sixteen on account of some suspicion of his birth, he was inveigled to the Bahmani court and there sold as a slave. He gradually rose into favour, was entrusted with the command of a body of horse and a provincial government. He became the head of the foreign or Shiah party, between which and the Dakhani or Sunni party there was a continual contest for power. When the latter in the reign of Mahmud gained an ascendancy, Yusuf Adil retired to his government of Bijapur, and in 1489 took the royal title. He opposed the usurper of the Bahmani kingdom, put down the neighbouring chiefs, who like him were endeavouring to assert their independence, and was successful in meeting the attacks of the Vijayanagar raja. The Bahmani kingdom was eventually partitioned between him and the other new kings that arose about the same time in the Dekhan.

The following is the succession of the Adil Shahi kings :—

Yusuf Adil Shah	...	1489	Ibrahim Adil Shah	...	1579
Ismail Adil Shah	...	1510	Muhammad Adil Shah	...	1628
Mallu Adil Shah	...	1534	Ali Adil Shah	...	1660
Ibrahim Adil Shah	...	1535	Sikandar Adil Shah	...	1672
Ali Adil Shah	...	1557			

The territory of Bijapur extended from the Nira to the Tungabhadra, and from the Bhima to the sea. South of the Tungabhadra, it owned Adoni and perhaps Nandyal. The limits of its western boundary were Bankot and cape Ramas. Between this power and Vijayanagar there were constant collisions, until in 1565 the battle of Talikota terminated the power of the latter. In 1577, as we have already seen, a raid was made into the conquered territory, but repelled by the defence of Jagadeva Raya at Penkonda.

In 1637 a more formidable invasion took place. The Moghuls had taken Daulatabad in 1634, and Aurangzib was appointed viceroy of the Dekhan ; but the contests with the Moghul power were shortly brought to a close for the time by the treaty which extinguished the State of Ahmadnagar and made Bijapur tributary to Delhi. The Bijapur arms were now directed to the south, under Ran-dulha Khan; with whom Shahji, father of the famous Sivaji, was sent as second in command, with a promise of a jaghir in the territories to be conquered.

The course of this invasion* was by the open country of Bankapur, Harihar, Basvapatna and Tarikere, up to the woods of Bednur, the whole

* The pategar of Basvapatna or Tarikere is charged with having invited the Bijapur sultan to invade the country, in order to revenge himself for an insult received from the pategar of Ratnagiri or Sira, arising out of an obscene jest and a coarse and filthy practical joke which will not admit of mention.

of which was overrun. The Bednur chief was besieged in Kavale-durga but bought off the enemy. An attempt was next made on Seringapatam. A breach was effected but the Mysoreans repulsed the general assault with great slaughter, and the enemy was not only compelled to raise the siege but harassed in his retreat by successive attacks, in which, adds Wilks, the Raja obtained considerable booty. The invading army retired to the north of Melukote and then turned east. Kempe Gauda, representative of the Yelahanka family, who had by this time grown into a considerable chieftain, holding possession of Bangalore and Magadi, with the impregnable hill fortress of Savandurga, was next attacked, and Bangalore captured from him in 1638. The possessions of the Chikka Rāya, namely, Hoskote and all the present Kolar District east of it, were then seized, in 1639, and the victorious army, passing below the Ghats, took Vellore and Jinji. Returning to the tableland, Dod Ballapur, Sira and all the south of the Chitaldroog District fell to Bijapur in 1644.

By this time the conquests were complete, and a Province under the designation of Carnatic Bijapur Balaghat was formed out of the districts of Bangalore, Hoskote, Kolar, Dod Ballapur and Sira ; and bestowed as a jaghir on Shahji, who was also governor of the conquests below the Ghats, called Carnatic Bijapur Payinghat. He resided at first at Bangalore, but subsequently, when not engaged in military expeditions, lived sometimes at Kolar and sometimes at Dod Ballapur.

The policy of the invaders was, while taking possession of the capital town and administering the revenues of each principality, to grant the ousted chief an estate in some less productive part of his territory. This resulted in bringing under cultivation and attracting population to the more neglected tracts of the country. Thus Basavapatna and its possessions being retained, Tarikere was given to the palegar ; Bangalore was taken but Magadi left to Kempe Gauda ; similarly Hoskote was taken and Anekal granted ; Kolar was taken and Punganur granted ; Sira was taken and Ratnagiri granted.

Shahji was one of the most prominent characters of his day in India. A sketch of his remarkable career is given in the history of the Bangalore District. Under him the Mahratta element was largely introduced into the north of Mysore as well as into the Tanjore and other districts which he conquered below the Ghats. The Mahrattas, or Maha-Rattas, in whom we may recognize the descendants of a people that have already appeared more than once in our historical review,

after the overthrow of the Yádava kingdom of Devagiri, had been subjects first of the Bahmani and subsequently of the Ahmadnagar and Bijapur kingdoms. Their influence was much increased by a remarkable change introduced, chiefly for sectarian reasons, by Ibrahim Adil Shah, the fourth king of Bijapur, who came to the throne in 1535. Previous to his reign all the revenue and official accounts had been kept in Persian. But he recognized Mahratti or Hindvi as the official language of the revenue accountants, who were to a great extent Brahmans. He also employed large bodies of Mahratta cavalry called Bargeer. They differed from Siledars in being provided with horses by the state. The rise of the Mahratta power in the person of Sivaji, the son of Shahji, and the struggles of that race for empire have been often recorded. We shall meet with them frequently in the remaining portion of our history.

The possessions of Shahji in Mysore and Tanjore were governed after his death, which occurred in 1664, by his son Venkoji or Ekoji. But Sivaji, the only surviving son by the first marriage, resolved to lay claim to a half share. For this purpose, in which he was encouraged by Raghunath Narayan, who from being the minister first of Shahji and then of Venkoji had now come over to Sivaji, he made an expedition into the Carnatic in 1677. Before entering upon it, Sivaji paid his celebrated visit to the temple of Párvati at Sri Saila, where he spent twelve days in penance, and when about in his enthusiasm to sacrifice himself to the deity, was saved, it is said, by the interposition of the goddess Bhaváni. He then joined the army and, leaving the heavy part to besiege Vellore, pushed on with the remainder, consisting principally of cavalry, and gained possession of Jinji. He induced Venkoji, who resided at Tanjore, to meet him at Trivadi for the purpose of discussing matters, but could not persuade him to give up half the property. Sivaji thought to make him prisoner and compel him but refrained. He returned to Vellore, which had surrendered, took Carnatic Ghur, Arni and other forts, and overran all the jaghir districts, levying contributions or plundering. Affairs at Golconda now obliged him to hasten thither, Bellary being captured on the way. Venkoji took the opportunity to attack the troops left in the Carnatic. Sivaji on hearing of it wrote a remarkable letter* to his brother, full of good sense and injunctions to union and peace, which

* See GRANT DUFF, *Hist. Mahr.* I, 211.

won over Venkoji. He agreed to pay a large sum of money, to divide their father's jewels, and to share the revenues with his brother. On these conditions Sivaji allowed him to retain Tanjore, and restored the jaghir districts. This was in 1678. In 1680 Sivaji died.

The Moghuls.—In 1684 the Moghul arms, under Aurangzib, now seated on the throne with the title of Alamgir, were once more directed to the Dekhan for the purpose of crushing the Mahrattas and subjugating the Pathan states of Bijapur and Golconda. Bijapur was taken in 1687, Golconda in 1688. Flying columns were sent out after each of these captures to secure the districts dependent on each south of the Tungabhadra.

A new Province was thus formed in 1687, with Sira as its capital, composed of the seven parganas of Basvapatna, Budihal, Sira, Penkonda, Dod Ballapur, Hoskote and Kolar ; and having Harpanhalli, Kondarpi, Anegundi, Bednur, Chitaldroog and Mysore as tributary states. Bangalore, which had been seized, was at the same time sold to the Raja of Mysore for three lakhs of rupees, the sum for which he had just previously agreed to buy it of Venkoji ; who, finding it too far from the seat of his government to be effectually protected, had offered it for sale. Khasim Khan, with the designation of Faujdar Divan, was the first governor of the Province of Sira. Its annals are elsewhere given. It continued a Moghul possession till 1757.

Mysore Rajas.—Our attention will now be directed to the south, and the history of the royal family of Mysore. Their origin is traced to the heroes of a chivalrous exploit, Vijaya and Krishna, two young Kshatriyas of Yádava descent, who, according to tradition, had left Dváraka in Gujarat with the view of establishing themselves in the south. On arriving at Haḍi-nád or Hada-nád,* a few miles south-east of the present city of Mysore, they learned that the chief of the place had wandered away in a state of mental derangement ; and that the neighbouring chief of Kárugahalli, who was of inferior caste, taking advantage of the defenceless condition of the family, had demanded the only daughter of the house in marriage. To this a consent had been given under compulsion, and arrangements unwillingly made for the ceremony. The two brothers espoused the cause of the distressed maiden, and having secreted them-

* Such I gather from inscriptions is the correct form of the name given by Wilks as Hadana, and now corrupted into Hadinára.

selves with some followers, fell upon the chief and his retinue while seated at the banquet, and slew them. Marching at once on Kárugahalli, they surprised it and returned in triumph to Hadanád. The girl became the willing bride of Vijaya, who took the title of Oḍeyar or Woḍeyar,* and assumed the government of Hadanád and Kárugahalli; adopting at the same time the religion of the Jangamas or Lingavantas.

The immediate descendants of Vijaya are thus given by Mr. Bowring, who had the best means of determining such of the names and dates as were doubtful.

Vijaya	...	...	1399—1423
Hire Bettada Cháma Raja	...	...	1423—1457
Timma Raja	...	...	1458—1477
Cháma Raja, A'r-beral†	...	...	1478—1512
Bettada Cháma Raja	...	...	1513—1551

Of the events of this period no annals have been preserved until the time of Bettada Cháma Rája. He, during his lifetime, made a partition of his dominions between his three sons. To Appana Timma Raja he gave Hemahalli, to Krishna Raja he gave Kembala, and to Chama Raja surnamed Ból or Bald‡ he gave Mysore. Appana Timma Raja ruled from 1552—1570, and no male heir surviving to him and the next brother, the succession was continued in the junior or Mysore branch as follows :—

Hire Cháma Raja, Ból	...	...	1571—1575
Bettada Woḍeyar	...	...	1576—1577
Raja Woḍeyar	...	...	1578—1617
Cháma Raja	...	...	1617—1636
Immaḍi Raja	...	...	1637—1638
Kanthirava Narasa Raja	...	...	1638—1658
Doḍḍa Deva Raja	...	...	1659—1672
Chikka Deva Raja	...	...	1672—1704
Kanthirava Raja, Múk-arasu§	...	...	1704—1714
Doḍḍa Krishna Raja	...	...	1714—1731

Here the direct descent ended. Cháma Raja, a member of the Hemahalli family, was next elected, but eventually deposed by the dalaváyi¶ Deva Raja and the minister Nanja Raja. He died a prisoner at Kabbál-

* Oḍeyar, Woḍeyar, or Wadeyar is the plural and honorific form of Oḍeya, a Kannada word meaning lord, master. Wilks states that it indicated, at the period of which we are writing, the governor of a small district, generally of 33 villages. Vaḍér, a modification of the word, is the title of respect by which Jangama priests are addressed.

† Six fingered.

‡ Owing it is said to a stroke of lightning.

§ Dumb king, he was born deaf and dumb.

¶ The title of the chief officer of the state, who combined the functions of a general and a minister. It is derived from *daḍa*, Kan. for army, and literally means general. The office was mostly hereditary.

durga in 1734. Chikka or Immaḍi Krishna Raja, of Kenchengod, a younger and distant branch, was put on the throne in 1734 and died in 1766 ; being nominally succeeded by his son Cháma Raja, who died childless in 1775. Chama Raja, son of Devaraj Arasu of Arkotar, a member of the Kárugahalli family, was then selected at random by Haidar, who had usurped the government. He died in 1796. But the real rulers during this period were :—

Haidar Ali Khan	...	...	1761—1782
Tippu Sultan	...	...	1782—1799

On the fall of Seringapatam and death of Tippu, the British Government restored the Hindu raj and placed on the throne the son of the last named Cháma Raja ; since when the line has been continued as follows:—

Krishna Raja Wodeyar	...	...	1799—1868
Cháma Rájendra Wodeyar	...	...	1868—

At what period Mysore (properly Mahish-úru, buffalo town*) acquired that name is uncertain. Reasons have been given for supposing that it may have been known by that designation before the Christian era. The vulgar name of the place when Cháma Raja the Bald received it as his portion was Puragere, conjectured to be same as the Pirikere wherein the Kongu king Avinita acquired the recognition of royal rights in the 5th century. It is undoubted that for the last three centuries the name Mysore (Mahishúr) has been the common name of the fort and town erected or repaired by Hire Cháma Raja.

The fatal disaster which befel the Vijayanagar empire on the field of Talikota in 1565 diminished the influence of its viceroy at Seringapatam. We accordingly find Hire Cháma Raja evading the payment of the revenue or tribute due to him, and obtaining permission to erect some works, probably barriers, on the pretext that the wild hogs destroyed the crops and disabled him from paying the tribute. The works were, however, no sooner erected than the collectors of the royal dues were expelled. The imbecile viceroy attempted shortly after to seize Cháma Raja while paying his devotions at the temple of Ranganátha at Seringapatam. But he received warning of the plot and escaped ; and continued to evade all the demands of the viceroy with impunity.

* So called with reference to Mahish ásurá, the minotaur or buffalo-headed monster whose destruction is the most noted exploit of Chámanḍi, under which name the consort of Siva, the tutelary goddess of the Mysore rajas, is worshipped on the hill near the capital.

Bettada Wodeyar, who succeeded, was not long on the throne. Though brave, he had no capacity for government, and his younger brother Raja Wodeyar was shortly raised to the throne by the elders.* During his reign occurred one of the most important events in the annals of the Mysore house, the acquisition of Seringapatam. By what means this was effected is not known with certainty ; but in 1610 the aged viceroy Tirumala Raja retired to Talkad, where he shortly after died, and on his retirement Raja Wodeyar took possession of Seringapatam and transferred thither the seat of government. At the same time the religion of Vishnu was adopted by the court.

Raja Wodeyar extended the possessions of his family over all the south of the present Mysore District, and captured several places towards the north from Jagadeva Raya. 'His rule was remarkable for the rigour and severity which he exercised towards the subordinate Wodeyars, and his indulgence towards the ryots. The Wodeyars were generally dispossessed and kept in confinement, on a scanty allowance, at the seat of government ; and it was the policy of Raja Wodeyar to reconcile the ryots to the change by exacting from them no larger sums than they had formerly paid.'

All the sons being dead, Cháma Raja, a grandson, succeeded. By the capture of Channapatna in 1630, he absorbed the territories of Jagadeva Raya into the Mysore State, and completed what remained of conquest in the south. He pursued the same policy as his predecessor.

Immaði Raja, who came next, was a posthumous son of Raja Wodeyar. He was shortly poisoned by the daḷaváyi and Kanṭhirava Narasa Raja placed on the throne. He was the son of the gallant and generous Bettada Cháma Raja who had been superseded by his younger brother. The daḷaváyi thought to find him as forbearing and unambitious as his father. But he had already, when living in obscurity, given an evidence of his emulous and chivalric spirit. Hearing of a celebrated champion athlete at Trichinopoly who had overcome all opponents, he went there in disguise, and defeated and slew him in the presence of the whole court. Declining all honours for the feat, he quietly slipped away at night and returned home. Soon after his installation at Mysore, where that ceremony continued to be performed,

* Many noble and interesting traits of the characters of the two brothers and their mutual consideration are recorded in Wilks.

he learned of the means by which his predecessor had been removed, and had the minister assassinated.*

The year after his accession, he had to defend Seringapatam against the attack of the Bijapur forces under Ran-dulha Khan ; and, as already related, succeeded in effectually repelling the invader. He subsequently carried his conquests over many districts to the south, taking Danai-kankote, Satyamangala and other places from the Náyak of Madura. Westwards, Arkalgud and Bettadpur were captured. Northwards, he took Hosur (now in Salem), and at Yelahanka inflicted a severe defeat on Kempe Gauda of Magadi, levying a large contribution on him. With the booty obtained in his various expeditions, and the heavy tribute which from motives of policy he imposed on the gaudas or heads of villages in order to reduce their power, he improved and enlarged the fortifications of Seringapatam, and endowed the principal temples. He assumed more of royal state in his court, and was the first to establish a mint, at which were coined the Kanthi Ráya hunas and fanams called after him, which continued to be the current national money until the Muhammadan usurpation.

He died without issue, and of the possible claimants to the throne the most suitable were a grandson and a great grandson of Hire Cháma Raja, both about 32 years of age. The former, though of a junior branch, was selected, and is known as Dodda Deva Raja ; the latter, afterwards Chikka Deva Raja, was, with his father, placed in confinement at Hangala. It was during Dodda Deva Raja's reign that Sri Ranga Ráya, the last representative of Vijayanagar, fled for refuge to Bednur. Sivappa Náyak, who was the *de facto* ruler of that state, entered upon a considerable range of conquests southwards under pretence of re-establishing the royal line, and appeared before Seringapatam with a large force. He was, however, compelled to retreat, and the Mysore armies before long overran Sakráypatna, Hassan and other places, with the government of which Sri Ranga Raja had been invested by Sivappa Nayak. The Nayak of Madura now invaded Mysore, meditating the conquest of the country, but not only was he forced to retire, but Erode and

* The two peons or foot soldiers who did the deed scaled the wall of the minister's court-yard after dark, and lay in wait until he passed across, preceded by a torch bearer. The latter was first killed and the torch went out. 'Who are you?' said the minister. 'Your enemy' replied one of the peons and made a blow. The minister closed with him and threw him down, holding him by the throat. The other peon in the dark knew not which was which. 'Are you top or bottom?' he asked. 'Bottom' gasped the half-strangled peon, on which his companion dealt the fatal blow.

Darapur yielded to the Mysoreans, who levied heavy contributions on Trichinopoly and other important places. Dodda Deva Raja was a great friend of the Brahmans, and was profuse in his grants and donations to the holy order. He died at Chiknáyakanhalli, which, together with Hulyurdurga and Kunigal, had been conquered not long before.

Chikka Deva Raja, who was passed over at the commencement of the preceding reign, now succeeded, and became one of the most distinguished of the Mysore Rajas. His early youth had been passed at Yelandur, where he had formed an intimacy with a Jain named Visháláksha Pandit. When Chikka Deva Raja and his father were confined at Hangala, this man continued his attachment and followed them into captivity; not however from disinterested affection, but because he had ascertained by his knowledge of the stars that Chikka Deva Raja would certainly succeed to the throne. Having obtained a promise that if such an event should come to pass he should be made prime minister, he repaired to the capital and industriously circulated in secret among influential persons the prediction of Chikka Deva Raja's destiny. When therefore Dodda Deva Raja died, every one was prepared to receive the successor decreed by fate. They did not acquiesce quite so readily when the pandit was made minister, but the ability of the Raja and his adviser soon silenced all murmurs.

One of the earliest measures of the new reign was the establishment, for the first time, of a regular post throughout the country. Its functions were, however, conjoined with those usually discharged by a detective police, and information of the private transactions of each district was thus regularly collected and sent to court by the postal officials. Several conquests were made between 1675 and 1678, the most important of which were those of Madgiri and Midagesi, with some of the intermediate districts; which brought the Mysore frontier, projecting in a long arm northwards, up to that of Carnatic Bijapur, now disorganized by the raids of Sivaji, consequent on the dispute previously mentioned between him and his half brother Venkoji or Ekoji.

During the next ten years were introduced a number of financial changes, having for their object the increase of the revenue. The Raja was unwilling to incur the risk of increasing in a direct manner the established proportion of one sixth share of the crop payable to the crown as land revenue. A number of petty taxes were therefore imposed, of

a vexatious character*, in order that the ryots might be driven to seek relief and compound for their abolition in voluntarily submitting to an increase of the land assessment. Lands held by the soldiery as part payment for their services were, on grounds of policy, exempted. These measures gave rise to great discontent, which was fanned by the Jangama priests. The opposition was manifested by a determination not to till the land. The ryots deserted their villages and assembled as if to emigrate. The Raja's resolution was prompt, but sanguinary and treacherous. He invited all the Jangama priests to meet him at Nanjangud for the purpose of discussing matters. Only four hundred attended. What followed is thus described by Wilks.

A large pit had been previously prepared in a walled inclosure, connected by a series of squares composed of tent walls with the canopy of audience, at which they were successively received one at a time, and after making their obeisance were desired to retire to a place where, according to custom, they expected to find refreshments prepared at the expense of the Raja. Expert executioners were in waiting in the square, and every individual in succession was so skilfully beheaded and tumbled into the pit as to give no alarm to those who followed, and the business of the public audience went on without interruption or suspicion. Circular orders had been sent for the destruction, on the same day, of all the Jangam *mutts* (places of residence and worship) in his dominions; and the number reported to have been in consequence destroyed was upwards of seven hundred. This notable achievement was followed by the operations of the troops, which had also been previously combined. Wherever a mob had assembled, a detachment of troops, chiefly cavalry, was collected in the neighbourhood, and prepared to act on one and the same day. The orders were distinct and simple; to charge without parley into the midst of the mob; to cut down in the first selection every man wearing an orange-colored robe (the peculiar garb of the Jangam priests); and not to cease acting until the crowds had everywhere dispersed. It may be concluded that the effects of this system of terror left no material difficulties to the final establishment of the new system of revenue.

The chief odium of these massacres, as well as of the innovations which had led to them, naturally fell upon the Yelandur Pandit who was at the head of the administration. An impression also got abroad that the Raja was about to abandon the doctrines of the

* For a list see Wilks.

Jangama in which he was brought up, and to revive the ascendancy of the Jain faith. The result was that the minister fell a victim to a plot against his life, and he was assassinated one night while returning from court. The Raja was much affected at the news and hastened to the death bed of this faithful counsellor; who, with his dying breath, recommended a Brahman named Tirumalayangar as the most able and honourable man to succeed him as minister.

These transactions bring us to 1687—the period when the Moguls, having captured Bijapur, were taking possession of the Carnatic provinces dependent on it, and forming the Province of Sira. The agreement as to the sale at this time of Bangalore by Venkoji or Ekoji to the Mysore Raja for three lakhs of rupees; its seizure by Khasim Khan, the Mogul general, before the entry of the Mysore troops; and the conclusion of the bargain notwithstanding,—are related in the account of that District. Bangalore had now become a possession of the Mysore Raja, who assiduously cultivated an alliance with Aurangzib through the general Khasim Khan; while at the same time extending his territories in directions that would not interfere with the Mogul operations.

Túmkúr was taken the same year; then, turning east by way of Hoskote, the Mysore army descended the Ghats and subdued a great part of Baramahal and Salem. Between 1690 and 1694, the territories were extended westwards, and all the districts up to the Baba Budan mountains, including Hassan, Banavar, Chikmagalur, and Vastara were taken from Bednur. And by a treaty concluded in 1694 with the chief of that state, all these conquests, except Aigur and Vastara, were retained by Mysore.

The project was next formed of invading the possessions of the Nayak of Madura, and Trichinopoly was besieged in 1696. But while the strength of the army was engaged before that fortress, a Mahratta force,—marching to the relief of Jinji, where Rama the second son of Sivaji had been long besieged by the Moguls under Zulfikar Khan,—attracted by the hope of plunder, suddenly appeared before Seringapatam. An express was at once sent to the dalaváyi Kumáraiya directing him to return for the protection of the capital. But as he had made a vow not to appear before his Raja before he had taken Trichinopoly, he despatched his son Dodḍaiya in command of a force, which came up by rapid marches, and, by means of a stratagem which seems often to have been

resorted to by the Mysore troops,* inflicted a total defeat upon the enemy, in which the leaders were slain and the whole of the ordnance, baggage and military stores of every description captured.

Next year, Khasim Khan, the friend of the Raja at the court of Aurangzib, died; and Chikka Deva Raja resolved to send an embassy to the emperor for the purpose of establishing a fresh interest at court, and gaining if possible a recognition of his authority over the newly conquered territories. The embassy, which set out in 1699, found the imperial court at Ahmadnagar, and returned in 1700, bringing with it, as is alleged, a new signet from the emperor, bearing the title Jug Deo Raj†, and permission to sit on an ivory throne‡.

The Raja now formed various administrative departments, eighteen in number, in imitation of what his ambassadors had observed as the system pursued at the Mogul court. The revenues were realized with great regularity. It was the fixed practice of the Raja not to break his fast every day until he had deposited two bags (thousands) of pagodas in the treasury of reserve funds from cash received from the districts. He had thus, by economy and victories, accumulated a treasure which obtained for him the designation of Navakóti Náráyaṇa, the lord of nine crores (of pagodas).

Chikka Deva Raja died in 1704 at the advanced age of 76, after a youth spent in exile, followed by an eventful reign of more than 31 years; during which, amid the convulsions and revolutions which prevailed throughout the Dekhan and Carnatic, a secure and prosperous State had been established, extending from Palni and Anemalle in the south to Midagesi in the north, and from near Carnatic Ghur of the Baramahal in the east to the borders of Coorg and Balam in the west.

Kanṭhirava Raja, the son of Chikka Deva Raja, was born deaf and dumb, and thence called Múk arasu. But through the influence of

* It was the practice of the Mysore army to perform their night marches by the light of numerous torches, and this was made the foundation of a stratagem effected in the following manner. In the evening the Dalavayi sent a small detachment in the direction opposite to that on which he had planned his attack; and in the probable line by which he would move to throw his force into the capital. This detachment was furnished with the requisite number of torches and an equal number of oxen, which were arranged at proper distances, with a flambeau tied to the horns of each, in a situation where they could not be observed by the enemy. At an appointed signal, the torches were lighted and the oxen driven in the concerted direction, so as to indicate the march of the army attempting to force its way through the besiegers by an attack on the flank of their position. So soon as it was perceived that the enemy were making a disposition to receive the army of torches, Doddaiya silently approached their rear, and obtained an easy but most sanguinary victory.

† Jagat Deva Raja, the sovereign of the world.

‡ For the history of this throne see Vol. II. p. 234.

Tirumalayangar he succeeded to the throne. During his reign the dalaváyi Kanṭhirava attempted to reduce Chik Ballapur, but lost his life in the enterprize. His son Basava Raja appears to have continued the siege, and succeeded in levying tribute.

Doḍḍa Krishna Raja, son of the dumb king, next came to the throne. At this time a change was made in the government of Sira, whereby the jurisdiction of Sadat ulla Khan, who had hitherto governed the whole of Carnatic Bijapur, was confined to the Payinghat, and he was called Navab of Arcot; while a separate officer, Amin Khan, styled Navab of Sira, was appointed to the charge of the Balaghat situated on the tableland of Mysore. Sadat ulla Khan aware of the riches accumulated at Mysore, resented the removal of that State from his control, and formed a combination with the Pathan Navabs of Kadapa, Karnul and Savanur, and the Mahratta chief of Gutti, to seize upon it. Amin Khan resolved to be beforehand, and marched against the Mysore army. But the allies came up with him, and they ultimately agreed to joint action, of which Sadat ulla was to be the leader. The Mysore Raja was glad to buy off this formidable confederacy, and Sadat ulla received a crore of rupees. He accounted, however, for only 72 lakhs, which he divided in the proportion of 12 lakhs to each of the allies, pocketing the rest. This affair led to further exactions. Two years after, the Mahrattas appeared before Seringapatam and levied a contribution. In order to replenish these drains upon the treasury, an attack was made upon Kempe Gaḍa, the chief of Magadi, who was taken prisoner; and Sávan-durga, with the accumulated plunder of two hundred years, fell to Mysore.

The following estimate of the Raja's character will shew the direction in which matters were now tending.

'Whatever portion of vigour or of wisdom appeared in the conduct of this reign belonged exclusively to the ministers, who secured their own authority by appearing with affected humility to study in all things the inclinations and wishes of the Raja. Weak and capricious in his temper, he committed the most cruel excesses on the persons and property of those who approached him, and as quickly restored them to his favour. While no opposition was made to an establishment of almost incredible absurdity, amounting to a lac of rupees annually, for the maintenance of an alms house to feed beasts of prey, reptiles, and insects; he believed himself to be an unlimited despot; and, while amply supplied with the means of sensual pleasure, to which he devoted the largest portion of his time, he thought

himself the greatest and happiest of monarchs, without understanding, or caring to understand, during a reign of nineteen years, the troublesome details through which he was supplied with all that is necessary for animal gratification.'

Under these circumstances all power fell into the hands of the ministers, and they sought only to perpetuate their authority by placing pageant rajas on the throne. Cháma Raja of the Hemanhalli family was selected as a fit person to succeed the last raja; while the three chief offices in the state, those of *dalaváyi* or head of the army, *sarvódlhikári* or head of finance and revenue, and *pradhána* or privy councillor, were held by Deva Raja, who was *dalaváyi*, and Nanja Raja, his cousin, who combined in himself the other two offices. Cháma Raja managed to effect a revolution and displace these two, but they were imprudently left at large, while the new administration, by ill devised measures of economy, became so unpopular that Deva Raja and Nanja Raja found means to recover their power. The Raja and his wife were seized and sent prisoners to Kabbál-durga, the deadly climate of which they did not long survive.

A younger brother of the deceased raja, named Venkat Arasu, was passed over as having too much talent to be subservient; and a child of five years old, of a distant branch, was placed on the throne. He is known as Chikka Krishna Raja. The administration continued as before, except that Venkatapati was appointed to the office of *pradhána*, while Nanja Raja as *sarvódlhikári* was the head of the government. He died after six years, refunding at the approach of death eight lakhs of rupees, which he estimated as the amount he had improperly acquired. He also left a warning against employing the person who was his actual successor, Nanja Raja the younger brother of Deva Raja, and surnamed Karachúri.*

The Navabs of Arcot continued to eye with jealousy the rights of the Navabs of Sira to receive tribute from the rich State of Mysore. The weakness of Tahir Khan, now in power at Sira, led Dost Ali Khan, the governor at Arcot, to despatch a powerful and well-appointed army to exact from Seringapatam the largest contribution that had ever been obtained from it. Deva Raja, though no longer young, advanced to meet this invasion. The chiefs on both sides were reconnoitring at Kailancha on the Arkavati, a few miles east of Channapatna, when the two Musulman

* *Kara*, hand, *chúri*, dagger; equivalent to the English expression "a word and a blow."

chiefs, not heeding, came too far. Deva Raja skilfully cut off their retreat and falling upon them with his party, they were both slain after a brave resistance. Deva Raja followed up the blow, and attacked the Musulman camp with his whole army. They were completely surprised and overthrown, fleeing in confusion below the Ghats, while the victor returned in triumph to Seringapatam.

In 1746 Nanja Raja commanded an expedition into the Coimbatoor country against the palegar of Darapur; Deva Raja, the dalaváyi, taking charge of the revenue and finances. During the absence of the army, Nasir Jang, son of Nizam-ul-Mulk, now Subadar of the Dekhan, marched towards the capital by order of his father to levy a contribution. A deputation was sent forth to meet him, tendering allegiance; and while the negotiations were going on, Nasir Jang, encamped at Tomur, amused himself on the large tank, to which he gave the name of Moti Talab which it still retains.

Nanja Raja having returned successful from the south, his daughter was married to the nominal Raja, as the first step to further ambitious projects. But in 1749 was undertaken the siege of Devanhalli, in which obscure service an unknown volunteer horseman joined, who was destined before long to gain the supreme power of the state and to play no mean part in the history of India. This was Haider, who in a private capacity had accompanied his elder brother Shabaz, the commander of a small body of horse and foot in the Mysore army. The siege of Devanhalli was prolonged for nine months, after which the palegar was allowed to retire to his relation at Chik Ballapur. Haider's coolness and courage during the hostilities attracted the notice of Nanja Raja, who gave him the command of 50 horse and 200 foot, with orders to recruit and augment his corps; and also appointed him to the charge of one of the gates of Devanhalli, then a frontier fortress of Mysore.*

* Haider was the great grandson of Muhammad Bhelcl, an emigrant from the Panjab, who had settled in a religious capacity at Aland in Kallburga district. His sons Muhammad Ali and Muhammad Wali married at Kalburai, and then coming to Sirai, obtained employment as customs peons. Before long they removed to Kolar, where the elder died; upon which the other seized all the domestic property and turned his brother's wife and son out of doors. A Nayak of peons at Kolar took them in, and when Fette Muhammad, the son, was old enough, made him a peon. At the siege of Ganikota, on the troops being repulsed in a general assault, the young man distinguished himself by seizing a standard and planting it once more on the breach, which rallied the assailants and thus carried the day. For this exploit the Subadar of Sirai made him a Nayak, and he continued to rise. But on a change of Subadars, finding himself not in favour, he repaired to Arcot with 50 horse and 1,400 peons; and, on failing to obtain service from the Nabob on the conditions he demanded, entered the service of the Faujdar of Chittur. The latter was soon recalled to court, on which Fette Nayak returned to the Mysore and was appointed Faujdar of Kolar, with Budikote as a jaghir, and the title of Fette Muhammad Khan. At Budikote were born Shabaz and his brother Haider, the latter in 1722. They

An order soon arrived from Nasir Jang as Subadar of the Dekhan for the Mysore troops to attend him in an expedition against Arcot. A force, which included Haidar and his brother, was accordingly sent under Berki Venkata Rao, and joined the main army at Madgiri. It is unnecessary to follow the fortunes of the several claimants to the Navabship of the Carnatic, with the rival struggles of the English and the French in support of one and another. Suffice it to say that when Nasir Jang was treacherously killed and his camp broken up, Haidar took advantage of the confusion and managed to secure two camel loads of gold coins, which were safely despatched to Devanhalli, as well as about 300 horses and 500 muskets, picked up at various times. The Mysore troops shortly after returned to their own country.

In 1751 Muhammad Ali, the English candidate at Trichinopoly, opposed to Chanda Sahib, the French candidate at Arcot, sent an ambassador named Seshagiri Pandit to Mysore for assistance. The dalaváyi Deva Raja was averse to engaging in the enterprize; but his younger brother Nanja Raja was tempted by an extravagant promise of the cession of Trichinopoly and all its possessions down to Cape Comorin, to lend the required assistance, and agreed to make provision for Muhammad Ali in giving him Hardanhalli, at the head of the pass to Trichinopoly, as a jághir.

About the time of Clive's celebrated siege and subsequent defence of Arcot, a Mysore army, consisting of 5,000 horse and 10,000 infantry, marched from Seringapatam under the command of Nanja Raja. The only regular troops in the force were a small body in the corps of Haidar Nayak, armed with the muskets before mentioned. The army had borne no part in warfare, when the desertion and murder of Chanda Sahib

were the sons by a third wife. For Fatte Muhammad after three sons were born to them, had lost his first wife at Kolar, to which place she belonged, and on whose death he began the erection of the mausoleum there. His second wife was the daughter of a Nevayet who, in travelling from the Konkan to Arcot, had been robbed and murdered at Tarikere. The wife, with a son Ibrahim, and two daughters, escaping, had begged their way as far as Kolar, where Fatte Nayak proposed to marry the elder and was accepted. She, however, died without issue, and he then took to himself her younger sister, who became the mother of Haidar.

Fatte Muhammad and the eldest son by the first wife were killed in 1729, in a battle between his patron Abdul Rasul Khan of Dod Ballapur, Subadar of Sira, and Tahir Khan, the Faujdar of Chittur under whom he had formerly served, who now sought to gain possession of Sira as Suladar. The bodies of the slain father and son were conveyed to Kolar and buried in the mausoleum. Meanwhile, the family of Fatte Muhammad had been confined in Dod Ballapur as hostages for his fidelity, in accordance with the usual practice of those times. Abdul Rasul had also fallen in battle, and Abbas Khuli Khan his son, being left in possession of the Dod Ballapur jaghir on resigning all claim to Sira, now proceeded to plunder the families thus placed in his power. Shahuz and Haidar, the former about 9 and the latter 7 years of age, were tortured for payment of a pretended balance due from their father. When suffered to depart, the mother with her children went to Bangalore, and found shelter with her brother Ibrahim Sahib, who commanded some peons under the Kiledar. Shahuz, when old enough, obtained a subordinate command, and rose to the position in which he appears before Devanhalli.

occurred. His head, however, was sent as a trophy to Seringapatam and hung up over the Mysore gate. The war seemed now to be at an end, and Nanja Raja claimed Trichinopoly. Muhammad Ali, unable any longer to conceal from the English the illegally formed agreement, declared that he had never intended to observe the compact. At the same time he endeavoured to deceive Nanja Raja with fresh promises that he would deliver up the place in two months, and gave up to him the revenues of the island of Seringham and the adjacent districts. Nanja Raja occupied the island, intercepted supplies from Trichinopoly, intrigued with the French and tried to gain the fort by treachery. Though powerfully assisted by the French, all attempts on the place were frustrated by the skilful measures of Major Lawrence. Nanja Raj then endeavoured to enter into a treaty with the English, but this came to nothing. Meanwhile news arrived of a serious danger threatening at home, and Nanja Raj returned to Mysore in 1755 at the summons of his brother, having nearly exhausted the treasury in the expenses of this unprofitable war, added to a subsidy paid during most of the time to his Mahratta ally Morari Rao, and a loan of ten lakhs of pagodas to Muhammad Ali, which was never repaid.

The danger which called for the return of the troops under Nanja Raj was the approach of Salabat Jang, Subadar of the Dekhan, with a powerful French force under M. Bussy, to demand arrears of tribute. Deva Raj had no money to meet this demand and the enemy therefore invested Seringapatam. Matters were brought to a crisis before Nanja Raj, though hastening with forced marches, could arrive. Deva Raj was therefore driven to compromise for a payment of fifty-six lakhs of rupees. To raise this sum 'the whole of the plate and jewels belonging to the Hindu temples in the town were put in requisition, together with the jewels and precious metals constituting the immediate property or personal ornaments of the Raja and his family : but the total sum which could thus be realized amounted to no more than one-third of what was stipulated. For the remainder Deva Raj prevailed on the *soucars* or bankers of the capital to give security, and to deliver as hostages their principal *gumastas* or confidential agents : but as he was never afterwards enabled to satisfy the *soucars*, they left the *gumastas* to their fate, and of the two-thirds for which security was given not one rupee was ever realized. Of the unhappy hostages, some died in prison, others escaped, and after a period the remainder were released.' On hearing of

this transaction, Nanja Raj halted, and discharged one third of his army; not without great difficulty in paying their arrears.

Haidar, who had continued to advance in favour during the operations before Trichinopoly, was now appointed Faujdar of Dindigal. He had enlisted a considerable body of Bedar peons and of Pindari horsemen, and with the aid of Kande Rao, a Brahman *mutasaddi*, organized a perfect system of plunder, the profits of which were divided between Haidar and the plunderers.

‘Moveable property of every description was their object; and they did not hesitate to acquire it by simple theft from friends, when that could be done without suspicion and with more convenience than from enemies. Nothing was unseasonable or unacceptable; from convoys of grain, down to the clothes, turbans, and ear-rings of travellers or villagers, whether men, women or children. Cattle and sheep were among the most profitable heads of plunder: muskets and horses were sometimes obtained in booty, sometimes by purchase. The numbers under his command increased with his resources; and before he left Trichinopoly, besides the usual appendages of a chief of rank, in elephants, camels, tents, and magnificent appointments, he was rated on the returns and received pay for one thousand five hundred horse, three thousand regular infantry, two thousand peons, and four guns, with their equipments.’

Haidar proceeded with a considerable force to the south to take charge of his district, while Kande Rao was left at the capital to protect his interests. By a great variety of fictitious charges, Haidar managed to accumulate a large treasure, and, with the aid of skilled artificers under French masters, began to organize a regular artillery, arsenal and laboratory.

In 1756 the young Raja, now 27 years of age, becoming impatient of his position, was led into a plot for confining the ministers and taking the power into his own hands. The plot was discovered, and Deva Raj counselled mild measures. But Nanja Raj stormed the palace, forced the Raja to take his seat on the throne, and then cut off the noses and ears of his partisans before his face. This disgusting affair, and the contempt of his counsel, led Deva Raj to retire from the capital. Accompanied by his family and a large body of adherents, he descended the Gajalhatti pass in February 1757, and fixed his residence at Satyamangala. To meet his expenses he revoked the assignments made to Haidar, whom, therefore, Kande Rao advised to come to Seringapatam at once. Before he arrived, however, the Mahrattas under Balaji Rao appeared, demanding a contribution. Nanja Raj in vain represented his absolute inability.

Seringapatam was besieged, and the operations being directed by Europeans, was soon reduced to extremity. Nanja Raj was forced to compromise for 32 lakhs of rupees, but as all the cash and jewels he could muster amounted to no more than five lakhs, a large tract of country was surrendered in pledge,* and the Mahrattas departed, leaving agents for the collection of revenue, and six thousand horse in the pledged districts. On Haidar's arrival he expressed his regret that his troops had not been ordered up from Dindigal, advised that the revenue should be withheld from the Mahrattas, and their troops expelled at the beginning of the rains, which would prevent an invasion for that season. This was accordingly done. Haidar then waited on Deva Raj, and it was arranged between them that the resumed revenues should be restored to Haidar, with soucar security for three lakhs, in exchange for a military contribution of twelve lakhs due to Haidar for assistance rendered to the Nair Raja of Palghat, which Hari Singh, a brave Rajput adherent of Deva Raj and Haidar's rival in the Mysore army, was deputed to collect. Haidar now returned to Dindigal and planned the conquest of Madura, which did not succeed ; and he shortly returned to Seringapatam, where his presence was urgently required.

The troops, whose pay had long fallen into arrears, had mutinied and sat in *dharna* at the gate of the minister. Nanja Raja sold the provisions in store, but the proceeds fell far short of the demand. Haidar hearing of the state of affairs hastened to Satyamangala and prevailed on the old chief Deva Raj, then very ill, to return to the capital and unite with his brother in restoring order at this critical juncture. But Nanja Raj was required first to make atonement to the Raja for his former outrage. This done, he went forth with a great procession to meet Deva Raj and conduct him from Mysore to the capital. Here Deva Raj died, six days after his arrival, probably from dropsy, though suspicion naturally fell on Nanja Raj.

Nanja Raj, disgusted with the task of liquidating the arrears due to the troops, now requested Haidar and Kande Rao to undertake it. This they did after a strict scrutiny of the demands, which their consummate skill in such matters enabled them to rid of all excessive and false charges ; and the claims were finally settled by distribution of all the available state property, down to the Raja's elephants and horses. At the

* The districts pledged were Nagamangala, Bellur, Kikkeri, Chanraypatna, Kadur, Banavar, Haruhalli, Honvalli, Turivekere, Kandikere, Chiknayakanhalli, Kadaba, Kallur, and Huliyaundurga.

same time Haidar's own troops were placed as guards of the fort ; and as soon as the mutineers, having been paid and discharged, had left the capital, the most wealthy chiefs in the army were seized and all their property confiscated as ringleaders in the mutiny.

Hari Singh who had been sent to receive the tribute due from Malabar, found himself unable to realize any of it, and on hearing of the death of his patron Deva Raj, was marching back, when Haidar to get rid of his rival, under pretence of sending back troops to Dindigal, despatched a force which fell upon Hari Singh at night while encamped at Avanashi, and massacred him as a mutineer with the greater part of his followers. Haidar presented three guns and 15 horses to the Raja and kept the rest of the plunder. At the same time, in lieu of the soucar security which Deva Raj had given him, an assignment was granted on the revenues of Coimbatore, and the fort and district of Bangalore were conferred on him as a personal jaghir.

The Mahrattas, whose troops had been expelled as before stated, now returned, early in 1759, in great force under Gopal Hari ; and re-occupying all the pledged districts, suddenly appeared before Bangalore, which they invested and at the same time sent a detachment which surprised Channapatna. Haidar was appointed to the chief command of the army to oppose this invasion. He stationed one detachment at Malvalli, under his maternal uncle Mir Ibrahim, and another at Maddur under Latf Ali Beg. The latter, by feigning fear of attack, drew out the Mahrattas from Channapatna, and then surprised and took it by escalade. Haidar now concentrated his forces near Channapatna, and Gopal Hari, raising the blockade of Bangalore, marched to meet him with a superior force. After three months of various warfare, Gopal Hari, finding himself straitened by the activity of his opponent, proposed a negotiation. It was arranged that the Mahrattas should relinquish all claim to the districts formerly pledged, and that Mysore should pay 32 lakhs in discharge of all demands past and present. To raise the money, a *nazarina* or gift was levied from all the principal public servants and wealthy inhabitants, but Kande Rao could obtain only 16 lakhs from this source. The Mahratta soucars, however, made themselves responsible for the rest on the personal security of Haidar, on the understanding that he should have the management of the restored districts in order to realize the amount.

The Mahrattas now withdrew to their own country, and Haidar returned in triumph to Seringapatam, where he was received by the Raja in the most splendid durbar since the time of Chikka Deva Raj. He was saluted with the title of *Fatte Haidar Bahádúr*, and Nanja Raj on his approach rose up to receive him and embraced him.

Before long the pay of the troops again fell into arrears, and Haidar was again the medium of satisfying their demands. This he was commissioned to do by the Raja on condition that he renounced Nanja Raj; and the fresh assignments made to enable him to meet the demand placed in his hands more than half the possessions of the kingdom. Kande Rao was made *pralhina*, and on Nanja Raj was settled a jaghir of 3 lakhs of pagodas, with a stipulation that he should maintain 1,000 horse and 3,000 foot without personal service. Nanja Raj, who had been the virtual ruler of Mysore for nearly 20 years, yielded to necessity and departed from the capital in June 1759 with all his family and adherents. He lingered however at Mysore, under pretence of visiting the temple at Nanjangud, until it became necessary for Haidar to regularly besiege the place and force him to retire. His jaghir was in consequence reduced to one lakh, and he was required to fix his residence at Konanur in the west. His daughter, married to the raja, died soon after. Haidar now received a further assignment of four districts for the expenses of this siege, though the grant was opposed even by Kande Rao.

A French emissary, styling himself the Bishop of Halicarnassus, shortly arrived with proposals to Haidar to join them in expelling the English from Arcot. The terms of a treaty for the purpose were concluded with Lally at Pondicherry on the 4th of June 1760. Haidar was to furnish 3,000 select horse and 5,000 sepoy with artillery, to be paid by the French; and on a favourable conclusion of the war, Trichinopoly, Madura and Tinnevely were to be ceded to Mysore. In order to clear the way from Seringapatam to Arcot, the district of Baramahál,* though in the possession of the Navab of Kadapa, was taken possession of by Haidar, as well as Ankal from the palegar of that place; while the French yielded up the fort of Tyágar as a point of communication. The Mysorean troops, commanded by Makhdum Ali, on descending the ghats, gained one easy and unexpected victory at Trivadi on the 17th of July.

* So called from its twelve hill forts, viz. Krishnagiri, Trijatur, Vaniambadi, Jagadeva-gada, Kavila-gada, Maharáj-gaḷa, Bhujanga-gaḷa, Katara-gaḷa, Gagana-gaḷa, Sudarshana-gaḷa, Tatubal, and Ráyakoṭa.

But the ambitious prospects which this opened up were swiftly blighted by the imminent jeopardy in which Haidar in a moment was placed.

The royal party at Seringapatam found that an exchange of Haidar for Nanja Raj had left them in the same dependent condition as before, and a plot was formed by the old dowager and Kande Rao for getting rid of one whose recent encroachments tended to a complete usurpation of the government. A favourable opportunity seemed now to offer. A large portion of Haidar's troops was absent at Arcot; the remainder were encamped on the north of the river, which was too full to ford; while Haidar himself with a small guard occupied an exposed position under the guns of the fort. Negotiations were opened with a Mahratta force under Visaji Pandit, which was ravaging the country between Ballapur and Devanhalli, and the services obtained of 6,000 horse to reach Seringapatam by the 12th of August. On the morning of that day the fort gates were not opened as usual, and Haidar was roused up by a tremendous cannonade upon his position at the Mahánavami mantapa—the site of the present Darya Daulat. In amazement he sent for Kande Rao, and was informed that he it was who was directing the fire. He saw at once the extent of the treachery, and sheltering his family* and followers as well as possible, promptly secured all the boats (*hari-gólu*) on the river. The Mahrattas, as usual, not having arrived, Kande Rao could not attack, and the day passed in negotiations. The result was that the landing place on the northern bank was left unguarded, and Haidar escaped that night across the river with a few tried followers, bearing what money and jewels they could carry, but forced to leave behind his wife with his eldest son Tippu, 9 years of age, and all his foot guards. The family were removed to the fort and kindly treated by Kande Rao.

Haidar fled north-east and arrived before daylight at Anekal, commanded by his brother-in-law Ismail Ali, having ridden 75 miles on one horse. Ismail Ali was at once despatched to see how matters stood at Bangalore. He had scarcely arrived there before Kande Rao's orders to seize the kiledar were received. But it was too late. Kabir Beg, an old friend of Haidar's, was faithful to him. The Hindu soldiers were excluded and the fort gates shut. Haidar, on receiving the news, at once set out and reached Bangalore the same evening.

* In the fright his wife was prematurely delivered of a son, Karim.

His position was indeed desperate. 'He was now left as it were to begin the world again on the resources of his own mind. The bulk of his treasures and his train of artillery and military stores all lost : the territorial revenue at the command of Kande Rao : and the only possessions on which he could rest any hope for the restoration of his affairs were—Bangalore at the northern, and Dindigal at the southern extremity of the territories of Mysore, with Anekal and the fortresses of Baramahal. The sole foundation of a new army was the corps of Makhdum Ali ; and its junction was nearly a desperate hope. He had, however, despatched from Anekal positive orders for them to commence their march without an hour's delay ; withdrawing altogether the garrison of Tyagar, and every man that could be spared from the posts of Baramahal.' He obtained a loan of 4 lakhs on his personal security from the saukars of Bangalore and was joined by a few adherents. Among others, a Muhammadan of rank, Fazal ulla Khan, son of the late Navab of Sira, offered him his services. All hope now rested on the corps of Makhdum Ali ; against whom Kande Rao had sent the Mahrattas and the best of his troops, and reduced him to great extremities.

A most unexpected turn in events saved Haidar from apparent destruction. Visaji Pandit was found ready to negotiate, and agreed to depart on the cession of Baramahal and a payment of three lakhs of rupees. The money was at once paid, and the Mahrattas marched off. Makhdum Ali, relieved from his critical blockade, proceeded to Bangalore. The explanation of the haste of the Mahratta retreat, which had excited Haidar's suspicion, now appeared. News had secretly been received of the crushing defeat of the Mahrattas by the Abdalis on the memorable field of Panipat, and all their forces were ordered to concentrate. Haidar who had delayed giving up Baramahal therefore retained it. He detached Makhdum Ali to secure the revenues of Coimbatoor and Salem ; and proceeded in person, accompanied by a French contingent, against Kande Rao, to whom place after place was yielding. He crossed the Kávéri below Sosile, and the two armies met near Nanjangud. Haidar's force being inferior in point of numbers, he endeavoured to avoid an action while waiting for reinforcements. But Kande Rao forced on a battle, and compelling Haidar's infantry to change its front, charged it while performing that evolution. Haidar was severely defeated and retired to Hardanahalli.

'Nothing but a confidence in powers of simulation altogether unrivalled could have suggested to Haidar the step which he next pursued. With a select body of two hundred horse, including about seventy French hussars under M. Hugel, he made a circuitous march by night; and early on the next morning, unarmed, and alone, presented himself as a suppliant at the door of Nanja Raj at Konanur, and being admitted, threw himself at his feet. With the semblance of real penitence and grief, he attributed all his misfortunes to the gross ingratitude with which he had requited the patronage of Nanja Raj, entreated him to resume the direction of public affairs and take his old servant once more under his protection. Nanja Raj was completely deceived; and with his remaining household troops, which during the present troubles he had augmented to two thousand horse and about an equal number of indifferent infantry, he gave to the ruined fortunes of Haidar the advantages of his name and influence, announcing in letters despatched in every direction his determination to exercise the office of *sarvādhikāri*, which he still nominally retained, with Haidar as his *dalavāyi*.'

Kande Rao now manœuvred to prevent the junction of Haidar with his army, and had arrived at Katte Maḷalvāḍi. The destruction of Haidar and his new friends appeared to be inevitable, when his talent for deception again released him from the danger. He fabricated letters, in the name and with the seal of Nanja Raj, to the principal officers of Kande Rao's army, to deliver him up in accordance with an imaginary previous compact. It was arranged that these letters should fall into the hands of Kande Rao, who, thinking himself betrayed, mounted his horse and fled in haste to Seringapatam. His forces became in consequence disorganized, when Haidar fell upon and routed them, capturing all the infantry, guns, stores and baggage. He next descended the Ghats, took all the forts that had declared for Kande Rao, and by the month of May returned to the south of Seringapatam with a large force. Here for several days he pretended to be engaged in negotiating, and every evening made a show of exercising his troops till after sunset. On the eighth day, instead of dismissing them as usual, he made a sudden dash across the river, and surprising Kande Rao's forces, completely routed them and encamped on the island.

He now sent a message to the trembling Raja, demanding the surrender of Kande Rao as being his servant, and the liquidation of arrears due, which were designedly enhanced; offering at the same time to

relinquish the service when the conditions were complied with. He however expounded his real views to the officers of state, and they, working upon the fears of the helpless Raja, prevailed upon him to resign the entire management of the country into the hands of the conqueror, reserving only districts yielding three lakhs of pagodas for himself and one lakh for Nanja Raj. Kande Rao was delivered up, Haidar having promised to spare his life and take care of him as a parrot, an expression used to denote kind treatment. It was however fulfilled to the letter, by confining him in an iron cage and giving him rice and milk for his food, in which condition he ended his days.

Haidar's usurpation was by this time complete ; but he entered on the government of the country, in June 1761, with a studied show of reluctance and the form of a mock submission to the wishes of the Raja. After two months, having placed Seringapatam under the command of his brother-in-law Makhdum Ali, he proceeded to Bangalore. Basalat Jang, a brother of the Subadar of the Dekhan, and therefore one of the claimants to that dignity, was at this time in possession of Adoni and meditated establishing his own pretensions. The south was the direction in which he could with least opposition extend his territory. He accordingly, in June 1761, planned to reduce Sira, then in the hands of the Mahrattas, but found it would require too long a siege. He therefore marched to Hoskote, which also defied his efforts. Negotiations were soon opened between Haidar and Basalat Jang ; and the latter, in return for a gift of three lakhs of rupees, invested Haidar with the office of Navab of Sira, styling him in the deeds of investiture Haidar Ali Khan Bahadur.*

Haidar now united his army to that of Basalat Jang and captured Hoskote. Dod Ballapur was next taken†, and lastly Sira. Here Basalat Jang left Haidar, being called to the north by the hostile movements of his brother Nizam Ali, now Subadar of the Dekhan. Haidar returned and attacked Chik Ballapur. Morari Rao of Gutti advancing to its relief, was defeated, and the place fell after a most obstinate defence, the palegar taking refuge on Nandi-durga. Kodikonda, Penkonda and Madak-sira, possessions of Morari Rao, were next taken ; and returning to Sira, Haidar received the submission of the palegars of Raydurga and Harpan-

* He also offered him the title of *Jang*, but Haidar, who could not pronounce it better than *Zang*, fancied it contained some covert sneer, and so declined it in favour of Fazal ulla, who thus became Haibat Jang.

† Abbas Khuli Khan, to whom he owed a debt of revenge, (see p. 251) abandoned his family and fled to Madras. But Haidar treated the family with great generosity.

nalli, and forced that of the palegar of Chitaldroog. The latter introduced to him a pretender to the throne of Bednur, as related in the history of the Chitaldroog District, and the invasion of Bednur was planned. He entered the province at the end of January 1763, and at Kumsi found the late raja's prime minister, who had been long imprisoned at this place. From him every information was obtained as to the approaches and resources of the capital, in consequence of which, Haidar, rejecting all the offers of money made to buy him off, pressed on. The Rani and her paramour fled, followed by the inhabitants *en masse*, who took shelter in the woods. Haidar, the instant of his arrival at the barrier, in March, ordered a noisy but feigned attack to be made on the posts in his front, while he himself at the head of a select column entered the city by a private path pointed out by the minister. The flames of the palace were extinguished and a seal placed on the doors of all but the poorest of the deserted dwellings. A booty was thus secured which has been valued at twelve millions sterling. Detachments were despatched to the coast and in pursuit of the Rani. The former took possession of the fortified island of Basavaraj-durga, as well as of Honavar and Mangalore. The latter took the Rani prisoner at Bállalráyan-durga. She, with her paramour, her adopted son the nominal Raja, and even the pretender whose cause Haidar had ostensibly espoused, were all alike sent to a common imprisonment at Madgiri.

This important conquest was ever spoken of by Haidar Ali as the foundation of all his subsequent greatness. He designed to make Bednur his capital, and gave it the name of Haidar-nagar. His family was removed thither, and the building commenced of a splendid palace (never finished). He also established a mint and struck coins—known as Haidari and Bahaduri pagodas—in his own name. A dockyard and naval arsenal were further formed on the western coast for the construction of ships of war.

The former officials of Bednur had been to a great extent retained in their offices, and when Haidar Ali having contracted the usual Malnad fever was unable to attend to business, they formed a conspiracy for assassinating him and recovering the capital. But it was discovered. The commissioners appointed to investigate it were found to be involved, and instantly hanged in his presence. Three hundred conspirators suffered the same fate before the day ended. All opposition was thus effectually crushed.

The hill country of Sunda was subdued in December. Meanwhile, Reza Ali Khan, son of Chanda Sahib, and the French candidate for the Navabship of the Carnatic, who escaping from Pondicherry on its capture by the English in 1761 had been living since in Ceylon, landed in Canara and claimed protection from Haidar. He was received with distinction and presented with a jaghir of a lakh of rupees. By his advice many changes were introduced into the army. The infantry were for the first time dressed in a uniform manner, and classed into *arval*, first, and *duyam*, second; the former composed of tried and veteran troops with superior pay. The etiquette and ceremonials of the court were also regulated, and a greater show of splendour assumed in retinue and personal surroundings.

Haidar now bethought himself of appeasing the Mahrattas and the Nizam, the former for the seizure of Sira, the latter for accepting the title of Navab from his brother. Embassies with gifts were accordingly sent to either court. At Haidarabad the object was attained, but the Mahrattas could not be reconciled, and Haidar resolved to anticipate an invasion. Savanur was conquered and the Mysore frontier advanced nearly to the Krishna, when Gopal Rao, the Mahratta chief of Merritch on the northern bank, was ordered to check further progress, but he was defeated. Madhava Rao, the Peshva, now crossed the Krishna with an immense army, and Haidar sustained a damaging defeat at Rattihalli, with severe loss of the flower of his army. He fell back to Anavatti, where also the Mahrattas were victorious, and Haidar with fifty cavalry barely escaped by the fleetness of their horses. The Mahrattas retook all the recent conquests to the north; and Haidar, driven back into Bednur with the most hopeless prospects, sent off his family and treasure with all speed to Seringapatam. At length negotiations were opened, and the Mahrattas retired in February 1765, on the restoration of all places taken from Morari Rao of Gutti and Abdul Hakim Khan of Savanur, and the payment of 32 lakhs of rupees. Sira was left in Haidar's hands.

During this unfavourable aspect of his affairs to the west, all his recent acquisitions to the east were in a flame of rebellion. His brother-in-law Mir Ali Reza was sent thither, and restored his authority. The pategar of Chik Ballapur, being starved out on Nandi-durga, was forced to surrender, and sent a prisoner, with his family, first to Bangalore and then to Coimbatour.

The conquest of Malabar was next undertaken, on information derived from Ali Raja, the Mapilla ruler of Cannanore, who thought with help from Haidar to extend his own power. A force was left at Basvapatna for the security of the north, and with all disposable troops Haidar descended into Canara early in 1766. The Nairs were subdued with difficulty, owing to the wooded nature of the country. The northern states being conquered, the Zamorin of Calicut came forward and made his submission. Haidar suspected treachery and, while concluding an agreement to reinstate him on payment of 4 lakhs of Venetian sequins, secretly sent a force to seize Calicut. The Zamorin was perplexed and delayed payment, on which he was confined to his palace and his ministers tortured. Fearing the same fate, he set fire to the building and perished with all his family. Leaving a force at Calicut Haidar moved on to Coimbatore, receiving the submission of the Rajas of Cochin and Palghat on the way. In three months the Nairs rebelled. Haidar returned to put them down, and adopted the expedient of deporting vast numbers to the less populous parts of Mysore. But the usual consequence to which the natives of Malabar are subject followed from the change of climate, and of 15,000 who were removed not 200 survived. A general amnesty was proclaimed, and the erection commenced of a fort at Palghat as a point of communication with the country.

During these operations, the pageant raja, Chikka Krishna Raja, had died, and Haidar had sent instructions to instal his eldest son Nanja Raja, then 18 years of age, in his place. On arriving at the capital in 1767, he discovered that this youth was not likely to acquiesce in his subservient position. Haidar immediately resumed the three lakhs of pagodas allowed for the Raja, plundered the palace of every article of value except the ornaments the women actually had on their persons at the time, and placed his own guards over the place.

Intelligence meanwhile arrived that the Mahrattas and Nizam Ali had planned a joint invasion of Mysore. The Mahrattas first appeared, under Madhava Rao, and Haidar in vain endeavoured to stop their progress by cutting the embankments of the tanks, poisoning the water in the wells, burning the forage, and driving off all the villagers and cattle on their route. The Mahrattas arrived at Raydurga and marched down the bed of the Haggari to Sira. Here Mir Sahib, Haidar's brother-in-law, betrayed his trust and gave it up in return for Guramkonda, the

possession of his ancestors. Haidar now made strenuous efforts to treat with the Mahrattas, who had overrun all the east, before Nizam Ali should join them. At length, by the address of Appaji Ram, a witty and skillful negotiator, the Mahrattas agreed to retire on payment of 35 lakhs of rupees, half to be paid on the spot, and Kolar to be retained in pledge for the rest. On Nizam Ali's arrival soon after, Haidar persuaded him into an alliance with himself against the English. Meanwhile, discovering that Nanja Raj, the old minister, was intriguing with the Mahrattas and Nizam Ali, he induced him by a false oath of security to come to Seringapatam on the plea that his advice was needed in the critical state of the country, and then made him prisoner, reducing his allowances to the bare necessities of life.

Nizam Ali deceived the English, with whom he was allied, up to the last moment; but on the 25th of August 1767, the forces of Mysore and Haidarabad descended the Ghats and attacked Colonel Smith, who, though at first taken by surprise, completely defeated them at Trinomali on the 26th September. Tippu, then 17, had, under guidance of Ghazi Khan his military preceptor, penetrated with a body of horse to the very precincts of Madras, when hearing the result of the battle of Trinomali he retired with precipitation to join his father. Mutual recriminations ensued between Haidar Ali and Nizam Ali, and nothing was done for a month. The former then seized upon Tripatur and Vaniambadi, but signally failed in an attack on the hill fort of Ambur. In the hope of closing the campaign with a brilliant exploit, he went in person against an English detachment escorting supplies, but was repulsed, his horse being shot under him and his turban pierced by a bullet. Leaving some cavalry to watch the English, the confederates retired in disappointment above the Ghats with all their forces at the end of the year.

On the side of the English, a force operating from the Northern Sirkars soon penetrated to Warangal. The Nizam was therefore glad to conclude a treaty with them, resigning all claims to Mysore; and separating from Haidar Ali, returned to his capital. Haidar also made overtures but without success. Meanwhile a fleet was fitting out at Bombay for capturing the Mysorean ports on the western coast, and the chiefs of Malabar were prepared to rebel. Haidar, leaving Fazal ulla Khan at Bangalore, marched with all haste to the west and retook Mangalore, Honavar and Basavaraj-durga which had fallen to the English. He then visited Bednur, and levied heavy fines on all the

landholders for furnishing supplies to his enemies. He also obtained large contributions from the chiefs of Malabar in consideration of recognizing their independence, which however they never attained.

The English forces in the east were in two detachments. One secured all the fortified places in Salem, Erode, Coimbatore and Dindigal ; while the other, after losing much time in the capture of Krishnagiri, had ascended the Ghats, taken Mulbagal, Kolar and Hosur, and was awaiting, burdened with the care of Muhammad Ali, the junction of the two at Hoskote. Here a corps under Morari Rao joined it, on the same day that Haidar Ali arrived at Bangalore. He made a desperate attempt to surprise the camp of Morari Rao but failed. Then, sending off his family and treasure to Sávan-durga, he set off on one of those extraordinary diversions which seemed always to occur to him when his affairs were most critical. He passed rapidly by a circuitous route, east and then north, to Guramkonda, with the view of inducing Mir Sahib to return to his allegiance. This unlikely object was actually attained, and Haidar, reinforced, returned towards Kolar and opened negotiations. But his offer of Baramahal and ten lakhs of rupees fell far short of the demands of the English and of Muhammad Ali, and came to nothing.

Haidar had meanwhile despatched Fazal ulla Khan to Seringapatam, whence he descended the Gajalhatti pass with a field force for the recovery of the districts in the south. He himself, after some indecisive engagements suddenly descended into the Baramahal, and giving out that he had defeated the English, passed on to Coimbatore, gaining possession of the fortified places on the route. The garrisons of Erode and Kaveripuram held out, but induced to surrender on a promise of safety, were marched off as prisoners to Seringapatam. Fazal ulla Khan invaded Madura and Tinnivelli, while Haidar, levying four lakhs of rupees from the Raja of Tanjore, moved by rapid marches towards Cuddalore. Negotiations were again opened, Haidar's first condition being that he would treat only with the English and not with Muhammad Ali. But the terms could not be agreed on, and hostilities continued. Haidar, who knew that the Mahrattas were preparing for another invasion of Mysore, now secretly sent off the whole body of his army to reascend the Ghats, while he himself, with 6,000 chosen horse, marched 140 miles in three days and a half, and appeared at the gates of Madras. He had come to make peace in person with the English. A treaty was thus concluded on the 29th March 1769, on the moderate conditions of mutual

restitution of conquered districts, an exchange of prisoners, and reciprocal assistance in purely defensive war. Thus ended what is known in the annals of British India as the first Mysore war. Haidar returned leisurely to Kolar and then to Bangalore.*

He was soon again in the field, in order to acquire the means to meet the meditated Mahratta invasion. When he had allied himself with Nizam Ali, it was secretly stipulated that Kadapa, Karnul and other places up to the Tungabhadra should be transferred to the control of Mysore. He resolved now to enforce this agreement, and moving north-east, levied contributions on the Patan navahs of Kadapa and Karnul, and the pategars of the neighbourhood. He however feigned friendship for Morari Rao, and was repulsed in an attempt on Bellary. But unable to meet the superior forces of the Mahrattas, now (1770) in full march on his capital, he gradually retired before them, laying waste the whole country to prevent their advance, and placing a detachment at Bednur under Tippu to cut off their supplies and harrass them in the rear. Negotiations being opened, Madhava Rao demanded a crore of rupees; Haidar would offer only 12 lakhs. Both parties claimed help from the English, who therefore remained neutral.

The Mahrattas conquered the whole of the north and east of the country, their progress being however long arrested by a gallant defence of the little fort of Nijagal (Nelamangala taluk), which was at last taken by the pategar of Chitaldroog, who had joined the Mahrattas. Madhava Rao was now taken ill and returned to Poona, leaving Tryambak Mama in command. Haidar was emboldened by this change and took the field, but met with no success. At last, an attempt to retreat unobserved by way of the Melukote hills being discovered, the Mysore army was attacked, disorganized and totally routed with great slaughter, at Chinkurali, on the 5th of March 1771. Haidar fled on horseback to Seringapatam. Tippu, who was thought to have fallen, escaped in disguise. For ten days the Mahrattas were engaged in dividing their spoils. They then sat down before Seringapatam with a large force, the remainder being employed in ravaging the whole country above and below the Ghats. Haidar could produce little effect on them, and in June 1772 a treaty was concluded, by which he bound himself to pay 30 lakhs of rupees, one half

*When Haidar appeared before Madras, so terrified was Abbas Khuli Khan of Dod Ballapur, who had taken refuge here (see p. 260) that he embarked in a crazy vessel and dared not land until the Mysore army had returned above the Ghats.

at once, besides five lakhs for 'darbar expenses'! For the balance, Kolar, Hoskote, Dod Ballapur, Sira, Madgiri, Chanraydurga and Guramkonda were left in their hands.

The Raja was found during these commotions to have opened an intrigue with Tryambak Rao. He was therefore strangled, and his brother Chama Raja put in his place. Haidar now proceeded to extort money from all who were supposed to have any, applying the torture where necessary. Even his brave general Fazal ulla Khan was not spared, nor Nanja Raj his old benefactor. The latter survived only one year, the former gave up all he had and died in extreme poverty.

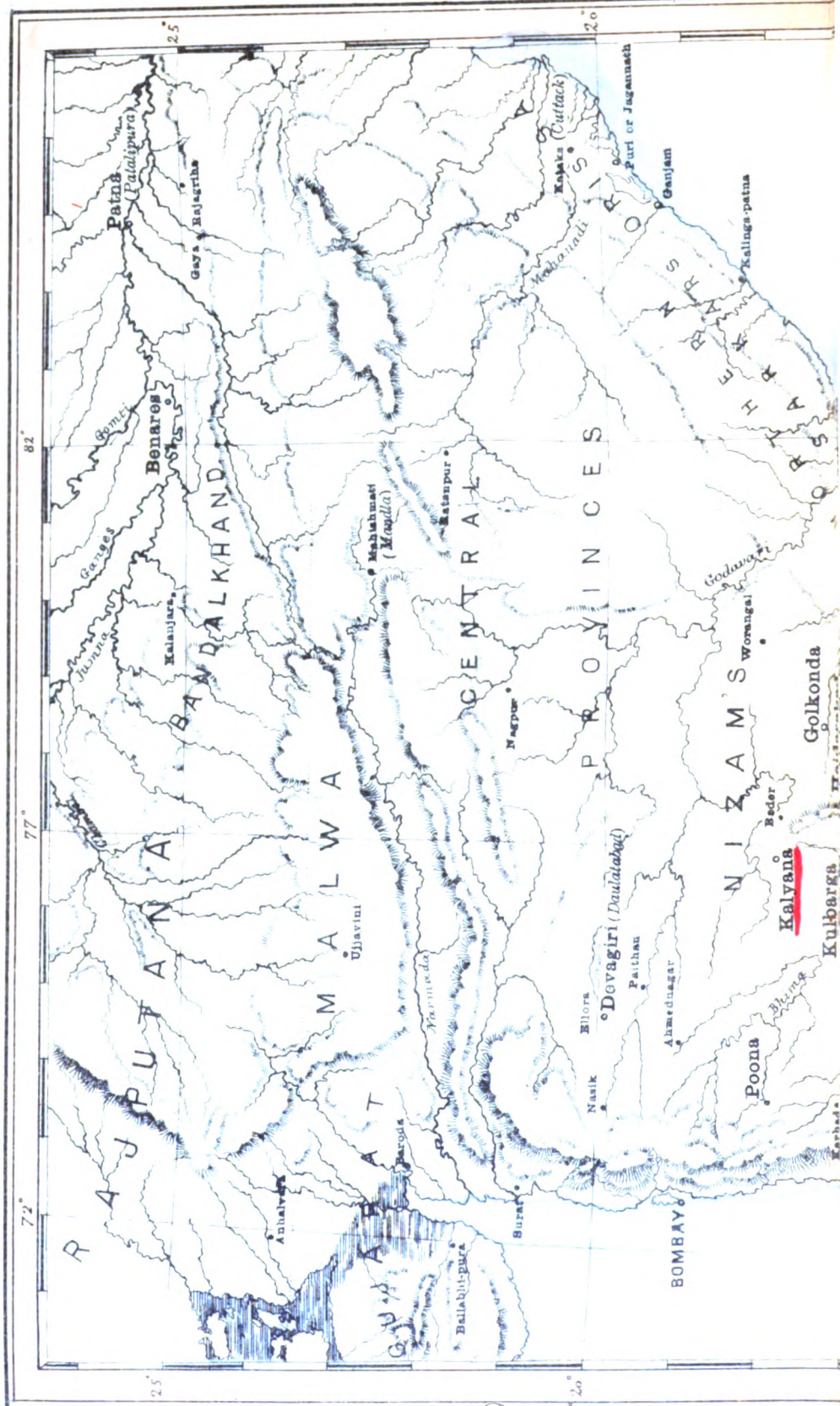
Madhava Rao died in November 1772, his successor Narayan Rao was killed in August 1773, and Raghunatha Rao or Ragoba became ostensible Peshva. Haidar considered the time favourable for action. He sent an embassy to Madras to form an alliance with the English. Tippu was detached to the north to recover the places ceded to the Mahrattas ; while Haidar suddenly invaded Coorg, as the first step towards reconquering Malabar. The Coorgs, entirely unprepared, were surrounded by his troops and a reward of five rupees offered for every head. About 700 had been paid for, when, struck by the fine features, Haidar relented and ordered the massacre to cease. The landholders were confirmed in their possessions on a moderately increased rent, a fort was erected at Mercara, and Devaiya the Raja, who had become a fugitive, was captured and sent to Seringapatam. A force was at once despatched to Malabar, which seized Calicut and reduced the Nair chiefs to dependence in a wonderfully short time. Tippu was equally successful in the north, and thus, between September 1773 and February 1774, Haidar completely recovered all the territory he had lost. A treaty was shortly formed with Ragoba, by which Haidar engaged to support his pretensions to be the head of the Mahratta State, in consideration of the tribute payable from Mysore being reduced to six lakhs. An insurrection in Coorg was promptly put down and Haidar returned with his army to Seringapatam early in 1775. The negotiations with the English unfortunately came to nothing, owing to the intrigues of Muhammad Ali, and Haidar therefore turned towards the French.

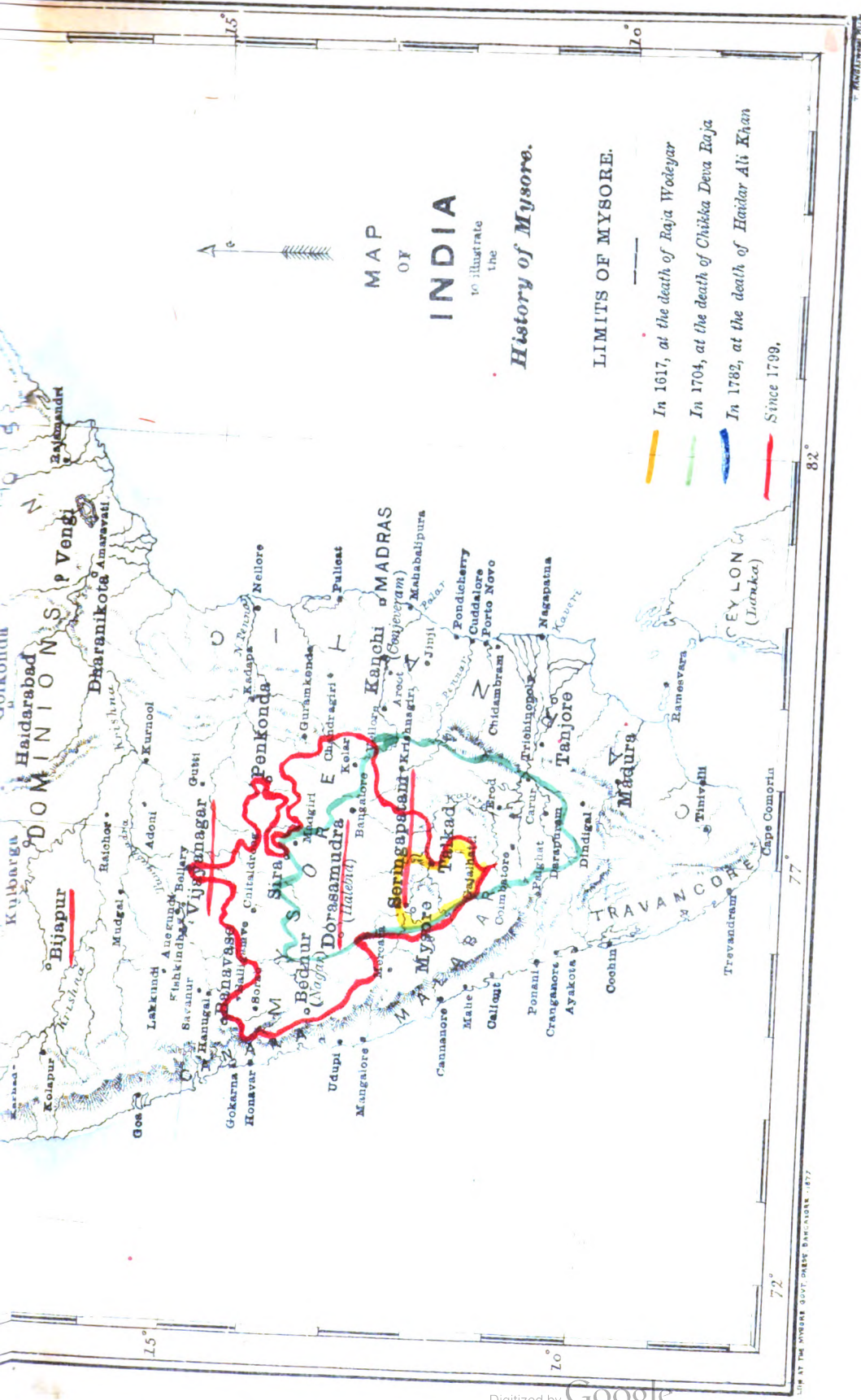
Chama Raja now died, and there being no heir to the throne, Haidar, who from motives of expediency still wished it to be occupied by a pageant king, resorted to the following method of selecting one. Assemb-

ling all the male children of the different branches of the family, he introduced them into a hall strewed with fruits, sweetmeats and toys, telling them to help themselves. They were soon scrambling for the things, when one little fellow took up a dagger in one hand and a lime in the other. 'That is the Raja', exclaimed Haidar 'his first care is military protection, his second to realize the produce of his dominions ; bring him hither and let me embrace him.' Thus did Chama Raja, the father of his late Highness, obtain the throne, and he was accordingly installed as Raja.

About this time Haidar received a body of 1,000 men from Shiraz in Persia to serve in his army, and sent an embassy for more. But the latter was lost in the Gulf of Kach, and the first instalment did not long survive the change of climate. Brahman agents were now employed to foment dissensions in such neighbouring states as Haidar had resolved to conquer. His assistance was thus applied for by the palegar of Bellary, who, having been induced by such emissaries to declare his independence, was attacked by Basalat Jang. Haidar marched to the relief in the incredibly short space of five days, fell upon the besiegers before they knew he had left his capital, and completely routed them, the commander being killed and Lally escaping with difficulty. But Haidar promptly took their place in the batteries and forced the chief to surrender it to himself at discretion. Meanwhile the forces sent in pursuit of Basalat Jang were bought off with a lakh of pagodas. A demand was next made by Haidar on Morari Rao of Gutti and refused. A siege ensued, and after some months Gutti was taken, all its dependencies added to Mysore, and Morari Rao sent prisoner first to Seringapatam and then to Kabbal-durga, where he shortly died.

Meanwhile Ragoba's power had met with a reverse which caused him to fly to Surat, where, on the 6th of March 1775, a treaty was concluded with the English to aid him in recovering his authority. He also proposed to Haidar to take possession of the Mahratta territories up to the Krishna, that he might be at hand to assist. No second invitation was needed. All the tributary palegars in the north were summoned to attend with their troops, and Savanur was overrun ; but the monsoon bursting with such violence as to cause great mortality in the army, Haidar disbanding the troops, returned to Seringapatam. All the amildars were, however, summoned to the capital, the rates of revenue were investigated and increased, the peshkash payable by tributaries was also





raised, and finally a general contribution under the name of *nazarána* was levied on the whole country for the expenses of the war.

Of the claimants to Mahratta sovereignty, Ragoba being supported by Haidar, while Nizam Ali declared for the ministerial party and the reputed son of Narayan Rao, a joint invasion of Mysore by the latter was the consequence. Four chiefs were sent in advance to clear Savanur of Haidar's troops, but they were skilfully and completely defeated by his general at Saunsi, two of them being taken prisoners. The main armies of the confederates now approached. The Mahrattas under Parasu Ram Bhao numbered 30,000, and were to march south-east through Savanur. The army of Nizam Ali, estimated at 40,000, under Ibrahim Khan, were to move south by Raichur. Haidar took post at Gutti. Parasu Ram Bhao, on hearing of the defeat of the advance corps, fell back beyond the Krishna for reinforcements. Ibrahim Khan, informed of this movement and secretly bribed by Haidar, thereupon also retired beyond the Krishna, after he had marched as far as Adoni. The rains set in and put a stop to further proceedings for the present. The navab of Kadapa and the palegar of Chitaldroog, instead of assisting Haidar had joined the enemy. He resolved now to punish them, and sat down before Chitaldroog. It was bravely defended for months, when Haidar, aware that 60,000 Mahrattas under Hari Pant were approaching, concluded an agreement to retire on payment of 13 lakhs of pagodas.

Haidar thence advanced to meet the enemy, in whose forces his agent had managed by a bribe of six lakhs of rupees to secure the treachery of a chief of 10,000, who was to come over in the first action. The Mahrattas, after waiting in vain for the forces of Nizam Ali, crossed the Tungabhadra. The armies met at Raravi. Manaji Pankria, the chief who had been bribed, hesitated. Haidar, suspecting double treason, made dispositions which excited the suspicions of Hari Pant; who saw he was betrayed, but knew not to what extent. 'In a few moments an impenetrable cloud of dust arose both in front and rear of the Mahratta line, which neither decidedly approached nor decidedly receded; it was evidently the mass of their cavalry in full charge; but not towards Haidar. Some time had elapsed before he perceived that the corps of Manaji Pankria had been enveloped and swept off the field; and that a powerful rear-guard presented itself to cover the retreat of the whole. The armies had not sufficiently closed to render pursuit decisive, and two guns only were lost by Hari Pant in effecting his retreat behind the

Tungabhadra, where a strong position secured him from insult, and afforded him leisure to investigate the extent of the disaffection which had produced his retreat. The troops of Manaji Pankria had made a tolerably gallant resistance, and attempted to move in mass towards Haidar; the greater part, however, were cut to pieces, and Manaji Pankria himself, wounded, and accompanied by no more than thirty select friends, had opened a way through the surrounding mass, and made good his escape to Haidar.* But the project of invasion was thus defeated. Hari Pant retreated. Haidar rapidly followed, and drove the enemy over the Krishna in December 1777. He now reduced all the forts between the Krishna and the Tungabhadra, making the Deshâyes or chiefs tributary to himself.

He then returned to Chitaldroog, which was taken at last, in March 1779, by treachery, as related in the history of the place. The Bedar population to the number of 20,000 were deported to people the island of Seringapatam, while all the boys were converted and trained up as soldiers, forming what were called Chela battalions.* Kadapa was the next object of attack. The Patan guards were surprised and forced to surrender; the navab retired to Sidhout, and Kadapa was taken without opposition. But Haidar was near losing his life by a plot of the Afghans. Admiring the courage, he had taken into his service all who could find security for their behaviour among his own followers. Eighty, who had not succeeded, were left that night with their arms near his tent. They suddenly arose at dead of night, slew the guards and made for Haidar's tent. The noise awaking him, he guessed the danger, pushed the bolster into the bed to resemble a sleeping figure, and slitting a hole in the tent, escaped. The assassins rushed in and cut at the bed. Paralysed with astonishment to find their victim gone, they were instantly overpowered. Of those who survived till morning, some had their hands

* A young Nair who had been taken from Malabar and forcibly converted to Islam, with the name of Sheikh Ayaz, was appointed governor of Chitaldroog. He was a handsome youth, and Haidar had formed the most exalted opinion of his merits, frequently upbraiding his son Tippu for inferiority to him. "Modest as he was faithful and brave, Ayaz wished to decline the distinction as one to which he felt himself incompetent; and I particularly objected that he could neither read nor write, and was consequently incapable of a civil charge. "Keep a corli* at your right hand," said Haidar, "and that will do you better service than pen and ink." Then assuming a graver countenance, "Place reliance," added he, "on your excellent understanding! act from yourself alone! fear nothing from the calumnies of the scribblers! but trust in me as I trust in you! Reading and writing!! how have I risen to empire without the knowledge of either?"

* A long whip of cotton rope, about an inch and a half in diameter at the thick end where it is grasped and tapering to a point at the other extremity; this severe instrument of personal punishment is about nine feet long; and Haidar was constantly attended by a considerable number of persons too constantly practised in its use.

and feet chopped off, and the rest were dragged at the feet of elephants. Sidhout surrendered on the 27th of May, and Abdul Halim Khan, the Navab, was sent prisoner to Srirangapatam. His sister, whose sense of honour was only equalled by her beauty, which surpassed that of any female captive yet secured, threatened to destroy herself rather than enter the unlimited harem of the conqueror in the usual informal manner. The ceremony of *nika* was therefore performed, and this lady, under the title of Bakshi Begam, was soon after placed at the head of the seraglio.

On returning to the capital a complete revision was made of the civil departments. Mir Sadak was made finance minister, Shamaia head of the police and post office. Since the defection of Kande Rao, every one of Haidar's ministers, Hindu and Muhammadan alike, had died from tortures inflicted to recover real or pretended defalcations. The unscrupulous ability of Shamaia developed to the most cruel perfection the system of espionage and fabrication of such charges, to atone for which the utmost farthing was exacted under the pressure of tortures which often terminated the lives of the unfortunate victims. A system was introduced of paying the troops on half monthly patts instead of monthly, which gradually resulted in their getting only 9 or 10 months' pay for the year. A double marriage was arranged in 1779 with the family of the navab of Savanur, whose eldest son was united to Haidar's daughter, and Haidar's second son Karim to the navab's daughter. The ceremonies were celebrated with great pomp at Srirangapatam, and accompanied with the gift of the unrestored half of Savanur to the navab.

During these festivities, an envoy arrived from the ministerial party at Poona, by whom Haidar was expecting an invasion. But induced by the hopelessness of Ragoba's cause, now a second time a fugitive, and other considerations, Haidar entered into a treaty. On condition that Ragoba's grant of territories up to the Krishna was confirmed, the future tribute fixed at 11 lakhs of rupees, and all arrears cancelled,—he agreed to co-operate with the dominant Mahratta party and Nizam Ali for the expulsion of the English from India. The failure of negotiations with the latter had made him ill disposed towards them. Two events gave ground for open hostilities. The English being then at war with the French, Pondicherry was taken in October 1778, and Mahe in March 1779. The capture of the former did not directly affect Haidar, but the latter was the port through which he received military supplies from the Mauritius. He had therefore declared it to be under his protection,

as being situated in his territory, and had threatened to lay waste the province of Arcot if it were attacked. The other event was that an English corps marching to relieve Adoni, proceeded through the territory of Kadapa without formal permission obtained from Haidar to whom it now belonged, the commanding officer being merely furnished with a letter to the manager of the district.

The news of this reached Haidar at the very time that the missionary Swartz had arrived at Seringapatam commissioned by the Governor of Madras to assure him of the amicable designs of the English Government. 'If the English offer the hand of peace and concord, I will not withdraw mine'—said Haidar, but he sent letters to the Governor requiring reparation for the alleged grievances and referring to his unfulfilled threat of revenge. Meanwhile, some English travellers who landed at Calicut were seized and conveyed to Seringapatam. Mr. Gray, member of council, was sent as an envoy to demand their release and to bring about a good understanding. But Haidar on finding that none of them were military had let them go, and Mr. Gray met them on his way; but he proceeded on to the capital, where he was treated with studied disrespect, for war had been determined on.

After prayers for success, in both mosques and temples, Haidar Ali left his capital and descended the Ghats in July 1780 with a force of 90,000 men, unequalled in strength and efficiency by any native army that had ever been assembled in the south of India. French officers of ability guided the operations, and the commissariat was under the management of Purnaiya, one of the ministers of finance. A body of horse, under his second son Karim Sahib, was sent to plunder Porto Novo; a larger body proceeded towards Madras, burning the villages and mutilating the people who lingered near them. From Pulicat to Pondicherry a line of desolation, extending from 30 to 50 miles inland, was drawn round Madras. The black columns of smoke were visible from St. Thomas's Mount, and the bleeding victims were pouring into Madras.

The English forces were rapidly assembled under Sir Hector Munro at Conjeveram, but a detachment under Colonel Baillie, which was on its way to join the main army, was hemmed in and cut off. Arcot also fell. Sir Eyre Coote, the Commander-in-Chief, arrived and took the field in January. The forts in greatest danger, such as Chingleput and Wandiwash, were at once relieved. Haidar at the same time raised the sieges of Permacoil and Vellore. A French fleet now appeared off the

coast, and the English force moved to cover Cuddalore, which was threatened by Haidar with the view of occupying it as a depôt for the troops expected from France. But Sir Edward Hughes being off the western coast with a British squadron, destroying Haidar's infant navy in his own ports of Calicut and Mangalore, the French fleet made off for Mauritius; and Haidar, who had avoided every opportunity of coming to close quarters with Coote, withdrew rapidly to the interior, leaving a sufficient force to intercept all supplies. While a want of these, and a wretched equipment, prevented the English from following, he ravaged the district of Tanjore, sending off to the upper country all that was moveable, including immense herds of cattle. 'Weavers and their families,' adds Wilks, 'were collected and forcibly sent to people the island of Seringapatam. Captive boys, destined to the exterior honour of Islam, were driven to the same place with equal numbers of females, the associates of the (then) present and the mothers of a future race of military slaves.'

In June, Coote moved out against Chilambram, but being repulsed, retired to Porto Novo. Encouraged by this, Haidar marched a hundred miles in two days and a half, and placed himself between the English and Cuddalore. Sir Edward Hughes at this juncture arrived off the coast. While with a portion of the squadron he protected Cuddalore, the English force, with only four days rice carried on the soldiers' backs, marched against Haidar's position; and on the same day, the 1st of July, was fought the battle of Porto Novo, in which, with a force one eighth that of the enemy, Sir Eyre Coote after a severe engagement completely beat the Mysorean army from the field. Haidar Ali, who was watching the operations seated 'on a stool on a small hill, was near being taken prisoner. He was conveyed out of danger by a faithful groom, who made bold to force the slippers on to his master's feet, saying 'We will beat them to-morrow, in the meantime mount your horse.' He reluctantly left the field, pouring forth a torrent of abuse. Wandiwash, invested by Tippu, was again relieved, and he was recalled to join his father at Arcot.

Haidar, resolved to risk another battle, chose, as being fortunate to himself, the very spot on which Colonel Baillie's detachment had been overcome, and the anniversary of that event was the day fixed on. Sir Eyre Coote, after forming a junction with troops sent by land from Bengal, had taken Tripassore and wished for nothing so much as to bring his enemy to action. The result was the battle of Pollilore, fought on the

27th August, in which after an engagement of eight hours the Mysoreans were forced to abandon the field. Haidar now took up a strong position in the pass of Sholinghur, to prevent the relief of Vellore, reduced almost to extremities. At the battle of Sholinghur, fought on the 27th of September, victory again declared for the English, and Vellore was saved. The palegars of Chittore now came over to the English, and Haidar, indignant at their desertion, detached a select corps to burn their villages and lay waste their country. But Sir Eyre Coote, placing himself at the head of a light corps, after an absence of 38 hours, during 32 of which he had never dismounted from his horse, returned to camp having completely surprised and defeated these troops, capturing all their equipments.

The energy of Warren Hastings, the Governor General,—never more conspicuous than at this critical time when England, at war with America, France, and Holland, was engaged in a life struggle in India with the Mahratta hosts in the west, and the Mysoreans under Haidar in the south,—having triumphed over the mischievous opposition of a council which frustrated every public measure, had succeeded in withdrawing the active opposition of Nizam Ali and of one branch of the Mahrattas under Madoji Bhonsla. He now concluded a treaty with Sindia, on the 13th October 1781, and the mediation of the latter was to be employed in bringing about a peace between the English and the Poona Mahrattas under Nana Farnavis, which was actually effected in May 1782. Meanwhile Haidar's wakil had ascertained that this was intended, and that the Mahrattas would unite with the English in compelling his master to make peace, unless the latter would at once give up all the territories acquired by him north of the Tungabhadra and all claims over the palegars to the south, in which case they undertook to continue the war and bring back Sindia to the confederacy. Haidar now felt himself in a critical situation. He was beaten at all points by Sir Eyre Coote; he had received no adequate assistance from the French; the west coast was lost; Malabar, Coorg and Balam were in rebellion. The defeat of Colonel Braithwaite's corps in Tanjore by Tippu, which occurred at this time, had no permanent effect in improving his prospects.*

* It was about this period that Haidar being much indisposed, was either by accident or design left entirely alone with his minister Pooniah; after being for some time apparently immersed in deep thought, he addressed himself to Pooniah in the following words (related to Colonel Wilks by Pooniah).

"I have committed a great error, I have purchased a draught of *sendi* (spirits) at the price of a lac of pagodas: I shall pay dearly for my arrogance; between me and the English there were perhaps mutual grounds of dissatisfaction, but no sufficient cause for war, and I might have made them my friends in spite of Muhammad Ali, the most treacherous of men. The defeat of many Baillies and Braithwaites will not destroy them. I can ruin their resources by land, but I cannot dry up the sea; and I must be first weary of a war in which I can gain nothing by fighting."

He now resolved to abandon the east and to try his fortune in the west. In December he sent all the heavy guns and stores to Mysore, compelled the people below the Ghats to emigrate thither with their flocks and herds, destroyed the forts, and made arrangements for demolishing Arcot, when news suddenly arrived that a French force had actually arrived off Porto Novo. But of the troops M. Bussy had originally embarked for the prosecution of his plans in India, the first division had been captured by Admiral Kempenfelt in December 1781, and a second in April 1782. Several naval engagements also took place at this time in Indian waters, in which the English uniformly gained the advantage. Cuddalore, however, was now taken by the French; and forming a junction with Haidar, they carried Permacoill in May, before Sir Eyre Coote could arrive for its relief. But on the 2nd of June was fought the battle of Arni, in which the English were victorious, and nothing but the want of cavalry prevented a large capture of artillery.

On the other coast, the corps sent to Malabar under Makhdum Ali was completely defeated and destroyed at Tricalore by Colonel Humberstone, the commander being killed. Nothing could be done during the monsoon to retrieve this disaster, but as soon as the weather permitted in November, Tippu, assisted as usual by Lally's corps, under pretence of striking some blow near Trichinopoly, proceeded by forced marches across the peninsula, hoping to fall upon the English who were preparing for the siege of Palghatcheri. But in this he was disappointed, and sustained a defeat at Paniani on the 25th. While waiting for reinforcements to renew the attack, an event occurred of the utmost importance. The Mysorean army in Coromandel had cantoned 16 miles north of Arcot for the rains, the French being at Cuddalore, and the English at Madras. The health of Haidar had been declining, and in November was developed an abscess in the back, known as the *rajpora* or royal boil. The united efforts of Hindu, Muhammadan and French physicians did no good, and on the 7th of December 1782 this remarkable man breathed his last, at the age of 60.

War first brought him to notice, and engaged in war he died. War was his element. The brief periods of repose between one warlike expedition and another were consumed in repairing the losses of the last or providing the means for the next. The arts and products of peace he valued only as they furnished the sinews of war. But it is impossible to withhold homage from the great natural talents which

raised an unlettered adventurer* to the supreme control of a powerful kingdom, or the indomitable energy and fertility of resource which found in the most desperate reverses but fresh opportunities of rising.

The minister Purnaiya sagaciously planned that this unforeseen event should be concealed from the army until the arrival of Tippu, and Krishna Rao his official colleague acceded to the same course. It is a high testimony to the order and discipline of the army and the influence and ability of Purnaiya that this was successfully carried out. The body of Haidar, deposited in a large chest filled with aromatics, was sent off to Kolar under escort as if a case of valuable plunder. All business went on as usual. The chiefs of the army were separately and quietly taken into confidence, and all inquiries were answered to the effect that Haidar was better but weak. Only one officer, commanding 4,000 horse, conceived the project of removing the ministers, seizing the treasury, and proclaiming Abdul Karim, Haidar's second son. But the plot was discovered and the accomplices were put into irons and sent off under guard.

A courier on a dromedary, travelling 100 miles a day, conveyed the intelligence to Tippu at Paniani by the afternoon of the 11th. Next morning he was in full march eastward. Dispensing with all ceremony calculated to excite inquiry, he went forward as rapidly as possible, and after performing the funeral ceremonies at Kolar, joined the army in a private manner between Arni and Vellore on the 2nd of January 1783. The most ample acknowledgments were made to all the public officers, and especially to Purnaiya, for their prudent management of affairs during this critical period, and Tippu Sultan took peaceable possession of an army of 88,000 men, and a treasury containing three crores of rupees in cash, besides an immense amount of jewels and valuables.

The Mysoreans and the French, awaiting with sanguine prospects the arrival of M. Bussy to decide on the plan of the campaign, were offered battle by the English near Wandiwash on the 13th of February. But this was declined, and within a week news from the west obliged Tippu and his allies to withdraw the main body of the army for the defence of his possessions in that quarter. General Matthews had landed at Kundapur, carried Haidarghar, and on the 16th February captured

* He could neither read nor write any language, though he spoke fluently Hindustani, Canarese, Mahratti, Telugu, and Tamil. The sum of his literary attainments consisted in learning to write the initial of his own name *H* to serve as his signature on public occasions; but either from inaptitude to learn, or for the purpose of originality, he inverted its form.

Bednur. Honavar and Mangalore had also fallen to the English, who were now in possession of all the intermediate country. Shaik Ayaz, the Chela whom we have previously mentioned in connection with his appointment to the government of Chitaldroog, was at this time governor of the Bednur country. He had abundant reason for fear in the accession of Tippu, and having discovered as he anticipated that the latter had ordered his immediate assassination, abandoned his charge and fled to Bombay at the same time that the Mysore army was marching for its recovery. General Matthews, having gained spoils to the value of 81 lakhs of pagodas, besides jewels, was waiting for reinforcements, when Tippu appeared on the 9th of April. The latter dividing his army into two columns, with one retook Kavale-durga and Haidarghar, and with the other Anantapur; and cutting off all communication with the coast, invested Bednur. The garrison being starved out, capitulated on the 30th, on honourable terms. But instead of being sent to the coast as stipulated, both officers and men were marched off in irons to Seringapatam. Tippu now advanced for the recovery of Mangalore and invested it on the 4th of May. The garrison held out in spite of great hardships. In July arrived intelligence that peace had been concluded in Europe between the English and the French; the leaders of the French forces, therefore, to the great indignation of Tippu, announced the necessity for their withdrawal. An armistice was agreed to on the 2nd of August, but the articles were not observed by Tippu. Mangalore held out till the 30th of January 1784, when the starved-out garrison, whose bravery had excited the highest admiration even from Tippu, were allowed to retire to Tellicherry.

Meanwhile, in the east, the English had concluded an agreement with Tirumal Rao,—a resident at Tanjore, who professed to be a descendant of Tirumalayangar the minister of Chikka Deva Raja, and an agent of the Mysore Rani,—and had occupied the whole of the Coimbatore country. At Seringapatam, Shamiah, the postal and police minister, at the same time formed a plot for seizing the fortress and restoring the Hindu Raja. It was accidentally discovered on the very eve of the date appointed for its execution, the 24th of July. Shamiah and his brother were confined in iron cages, in which they perished. The other conspirators were dragged at the feet of elephants.

After negotiations purposely prolonged by Tippu until the fall of Mangalore, peace was concluded on the 11th March 1785, on the condition of the mutual release of prisoners and restitution of conquests. But

of the English officers the most distinguished had been previously removed by poison or assassination. Sayad Ibrahim, the commandant of the prison, is honourably distinguished for his humanity in attempting to alleviate their condition. On the capture of the country by the English, a mausoleum was erected over his tomb at Channapatna and endowed by the East India Company.

The reversion of Mangalore to the possession of Tippu was signalized by the forcible circumcision of many thousands of native Christians and their deportation to Seringapatam. A revolt in Coorg next year led to the same treatment of the greater part of the inhabitants, the occasion being marked by Tippu's assumption of the title of Padshah. All Brahman endowments were at this period resumed.

On returning from Mangalore, a demand had been made upon Nizam Ali for the delivery of Bijapur. He therefore formed an alliance with the Mahrattas, who not only countenanced the Deshaye of Nirgund in refusing Tippu's requisitions, but sent the latter notice that three years' tribute from Mysore was in arrears. On this he despatched a force against Nirgund, which the Mahrattas failed to relieve; and after operations protracted for several months, the Deshaye, induced on a false promise to deliver himself up, was treacherously put into chains and sent off to Kabbal-durga in October 1785. Kittur was taken in a similar manner. War now ensued. The Mahrattas under Hari Pant, and the forces of Nizam Ali under Tohavar Jang, were on the banks of the Krishna early in 1786, prepared for the invasion of Mysore. They first attacked Badami, and took it on the 20th of May. Tippu, keeping close to the cover of the Bednur and Sunda woods, made a sudden dash across the country to Adoni. Two assaults had been gallantly repulsed, when the approach of the confederate armies forced him to raise the siege. But the rising of the Tungabhadra induced the allies to abandon Adoni and cross to the north of that stream, and the sultan hastening to glut his vengeance on the fort, found it evacuated. In August, Tippu boldly crossed the stream, a movement quite unlooked for by the allies at that season, and formed a junction with the Bednur division. The hostile armies were now encamped in each other's view near Savanur. The unfortunate navab of this place, who, as we have seen, had allied himself by marriage with Haidar's family, had been ruined by every method of exaction, and now threw himself into the hands of the allies. Tippu was successful in his operations, especially in his night attacks, and the allies retiring from

Savanur, he entered it without opposition. The navab fled. A peace was at last concluded in 1787, by which Tippu agreed to pay 45 lakhs of rupees, 30 at once and 15 after a year; also to give up Badami, Adoni, Kittur and Nargund.

Returning by way of Harpanhalli and Raydurga, after deceiving those pategars by repeated acknowledgments of their services, he treacherously seized and sent them off to Kabbal-durga, plundering their capitals of every article of the slightest value and annexing their territories. On returning to the capital, he ordered the destruction of the town and fort of Mysore, and commenced building Nazarabad as related in the account of that place.

In January 1788, he descended to Calicut, and remained there several months framing various ordinances, and then marched to Coimbatore in the monsoon. He also now began to lay claim to the title of Paighambar, or apostle, on the ground of his religious successes, and symptoms of incipient madness it is said appeared. From Coimbatore he visited Dindigal, and meditated, it appears, the conquest of Travancore. Laying waste with fire and sword the territories of refractory pategars, he returned to Seringapatam, and devoted four months to a classification of *sayads* and *sheikhs* in his army into distinct brigades. A rebellion occurred now in Coorg and Malabar, and the Sultan, passing through Coorg to quiet it, entered Malabar. Large parties of the Nairs were surrounded and offered the alternative of death or circumcision. The Nair Raja of Cherkal, who had voluntarily submitted, was received and dismissed with distinction, but immediately after seized and hanged, his body being treated with every insult. Before leaving Malabar, Tippu visited Cannanore, where the daughter of the Beebee was betrothed to one of his sons. He also divided the country of Malabar into districts, each of which had three officers, charged respectively with the duties of collecting the revenue, numbering the productive trees, and seizing and giving religious instruction to the Nairs.*

Nizam Ali now sent an embassy proposing a union between himself and the Sultan as being the only remaining Muhammadan powers of the Dekhan and the south. But Tippu demanded as a preliminary an inter-

* His orders were, that "every being in the district, without distinction, should be honoured with Islam; that the houses of such as fled to avoid that honour should be burned; that they should be traced to their lurking places, and that all means of truth and falsehood, fraud or force, should be employed to effect their universal conversion."

marriage in the families, at which the pride of Nizam Ali recoiled, and the negotiations came to nothing.

Meanwhile embassies with ludicrous pretensions had been sent twice to Constantinople, and once to Paris. The visionary character of the Sultan's views may be gathered from the objects sought by the former. They were—either to deliver up Mangalore in exchange for Bassora on the Persian Gulf, or to obtain permission to erect a commercial factory at Bassora with exclusive privileges; and lastly, permission to dig a canal for the purpose of bringing the waters of the Euphrates to the holy shrine of Nejef.

The conquest of Travancore had for obvious reasons been contemplated by Haidar, and was now resolved on by Tippu. The Raja had, however, been specially named in former treaties as the ally of the English, and any attack upon him it had been declared would be considered ground for war. But a pretext was soon found. In 1759, when the Zamorin of Calicut had overrun the territories of the Raja of Cochin, the latter had applied for aid to Travancore; the Raja of which, sending an army under his general Rama, had recovered the entire country and driven out the Zamorin during 1760 and 1761. In return for this service certain districts were ceded by Cochin to Travancore, across which lines for the defence of its northern boundary had been erected by the latter power, which now bought from the Dutch the forts of Ayakota and Cranganur, situated at the extremity of the lines and essential to their security. Tippu, objecting to this step, set forth that the lines were erected on territory belonging to Cochin which was tributary to him, and proceeded to attack them on the 29th December 1789. But, contrary to expectation, he was repulsed with great loss, and was himself severely injured by falling into the ditch, into which he was forced by the rush of fugitives. He was saved with difficulty, his seals, rings and personal ornaments falling into the hands of the enemy as trophies. Beside himself with rage, he ordered the whole of his forces from Malabar and other parts, with battering guns from Seringapatam and Bangalore, to be sent for. At the same time he wrote to the Governor General stating that the attack was an unauthorized raid of his troops. But Lord Cornwallis was not to be deceived.

Tippu carried the lines and took the town of Travancore in March. An English force destined for Mysore was therefore assembled at Trichinopoly, and General Medows took command of it on the 24th of May. The Sultan—who only ten days before had written lamenting the misre-

presentations that had led to the assemblage of troops, and offering to send an envoy 'to remove the dust which had obscured the upright mind of the General'—now hastened to Coimbatore, where he received the reply that 'the English, equally incapable of offering an insult as of submitting to one, had always looked upon war as declared from the moment he attacked their ally the king of Travancore.'

An alliance had meanwhile been formed by the English with the Mahrattas and Nizam Ali, and treaties were signed in July, binding them to unite against Tippu, on the basis of an equal division of conquests, with the exception of any made by the English before the others joined. The plan of the campaign was—for the main division of the English, after taking all the forts of Coimbatore and Palghat, to ascend to the tableland by the Gajalhatti pass, while another division invaded Baramahal. Carur, Darapuram, Coimbatore, Dindigal, Erode and other places had been taken, when in September, the Sultan, leaving stores and baggage under charge of Purnaiya at the summit, descended the Gajalhatti pass and attacked Floyd's detachment at Satyamangala. But after much fighting he retired, and Floyd crossing the Bhavani without opposition, proceeded to join the force with General Medows. While the several English detachments were forming a junction, Tippu retook Erode and Darapuram, but finding an attempt on Coimbatore to be hopeless, set off with three-fourths of his army to Baramahal, which the English had invaded on the 24th of October. Colonel Maxwell had posted himself at Kaveripatam, and by his skilful manœuvres foiled all the Sultan's attempts.

Being advised by Krishna Rao, the only person at this period admitted to his counsels, the Sultan now resolved to carry the war into the enemy's country, in order to draw them off in pursuit of him. He accordingly made rapid marches to Trichinopoly, and threatening that place, plundered Seringham. On General Medows' approach, he went northward, burning and plundering along his route; was repulsed in an attempt to take Tyagar, but took Trinomalee and Permacoil, and then despatched an envoy to Pondicherry. The services of a French official were there engaged as ambassador to Louis XVI, demanding the aid of 6,000 men and offering to pay all expenses. (The king of France, however, on receiving Tippu's message, declined the assistance applied for.) On the west coast, the Mysorean army was totally defeated on the 10th December Cannanore was taken and the whole of Malabar was in possession of the

English. The allies, too, at last took part in operations, the Mahrattas besieging Dharwar, and Nizam Ali's army Kopal.

Lord Cornwallis, the Governor General, now himself took command of the British army, and concentrated the forces near Vellore. Tippu hastened up the pass of Changama to oppose the English advance. But Lord Cornwallis, by a feint of ascending by the pass of Amboor, conveyed the whole army with all its stores and baggage by the Mugli pass and arrived at Hoskote without firing a shot. Tippu, dreaming of the 6,000 Frenchmen, had been outmanœuvred by the English. He was now alarmed for his harem and with his whole army personally superintended their removal from Bangalore. The English encamped before it on the 5th of March, overcoming with ease the efforts of Tippu to capture their baggage. The Sultan deemed it prudent to draw off to Kengeri. But when on the 7th the petta was carried, he was astonished and indignant, and moved out with his whole force for its recovery. But the Mysoreans were repulsed with great slaughter from every point, and so evacuated the town. The fort of Bangalore was next besieged. 'Few sieges' remarks Wilks, 'have ever been conducted under parallel circumstances: a place not only not invested, but regularly relieved by fresh troops; a besieging army not only not undisturbed by field operations, but incessantly threatened by the whole of the enemy's force. No day or night elapsed without some new project for frustrating the operations of the siege; and during its continuance, the whole of the besieging army was accoutred, and the cavalry saddled, every night from sunset to sunrise.' A breach having been made in the curtain to the left of the projecting works of the Delhi gate and part of the adjoining tower, Lord Cornwallis resolved to give the assault on the night of the 21st.

It was bright moonlight—eleven was the hour appointed, and a whisper along the ranks was the signal appointed for advancing in profound silence; the ladders were nearly planted, not only to ascend the faussebray but the projecting work on the right, before the garrison took the alarm; and just as the serious struggle commenced on the breach, a narrow and circuitous way along a thin shattered wall had led a few men to the rampart on the left flank of its defenders, where they coolly halted to accumulate their numbers till sufficient to charge with the bayonet. The gallantry of the killedar, who was in an instant at his post, protracted the obstinacy of resistance until he fell; but the energy of the assailants in front and flank at length prevailed. Once established on the ramparts, the flank companies proceeded as told off, by alternate companies to the right and left, where the resistance was everywhere

respectable, until they met over the Mysore gate: separate columns then descended into the body of the place; and at the expiration of an hour all opposition had ceased.

On ascending the breach, a heavy column was observed on the left, advancing from the embankment described to attack the assailants in flank and rear; but this also had been foreseen and provided for, and they were repulsed with great slaughter by the troops reserved for that special purpose; a similar column, lodged in the covered way on the right, had been dispersed at the commencement of the assault by a body appointed to scour it and draw off the enemy's attention from the breach; and at the moment the flank companies had met over the Mysore gate, another column was perceived advancing along the sortie to enter and reinforce the garrison; but a few shot from the guns on the ramparts announced that the place had changed masters. The carnage had been severe but unavoidable, particularly in the pressure of the fugitives at the Mysore gate, which at length was completely choked.

The Sultan had warned the garrison to expect the assault, and moving at nightfall from his camp at Jigani, had conveyed his whole army within a mile and a half of the Mysore gate to support the place. But so rapidly was it carried that the fugitives crowding out of the gate gave him the first intimation of its capture. Fears of an immediate advance on Seringapatam agitated the Sultan. He therefore despatched Krishna Rao, the treasurer, and Mir Sadak, the divan, to remove all the treasure and the harem to Chitaldroog. But his mother dissuaded from this step as betokening fear to the troops. But the obscene caricatures of the English, painted by his orders on the walls of the houses in the main streets, were effaced with whitewash; and the English boys, retained in violation of the treaty of 1784, who had been trained up to sing and dance were strangled. His own people now began to fall away from him. Evidence of conspiracies came to light, and Krishna Rao, with his brothers, as well as others of the Hindu ministers, were in the next few days strangled or dragged to death by elephants. Meanwhile, in order to form a junction with the cavalry from Nizam Ali, Lord Cornwallis moved north on the 28th. Devanhalli and Chik Ballapur yielded to the English, and several pategars tendered their allegiance.

The British force now prepared to march on Seringapatam, and Tippu took up a position on the Channapatna road, supported by the hill forts of Ramgiri and Sivangiri, with the view of opposing it. But Lord Cornwallis, unexpectedly marching by way of Kankanhalli, arrived without opposition at Arikere, 9 miles from Seringapatam, on the 13th of May.

His route had been converted into a desolate waste, all the villagers and cattle being driven into the island of Sivasamudram, and every vestige of supplies or forage destroyed. The passage of the river at Arikere being impracticable, it was resolved to move to Kannambádi, higher up ; for the double purpose of fording the river there and forming a junction with General Abercromby, who, advancing through the friendly country of Coorg, had taken Periyapatna.

Tippu had always avoided a general action with the English, but goaded on to risk a battle for the capital, he took up a strong position between Karigatta and the river to oppose the march of the English. Lord Cornwallis planned a night attack to turn his left flank and cut off his retreat, but the bursting of a tremendous storm threw the troops into confusion. A general engagement ensued the next day, the 15th, in which the English were completely victorious, and the Mysoreans, driven from every point, forced to take refuge on the island. Lord Cornwallis then moved to Kannambádi ; but the incessant rain and exhausted supplies brought on so great a mortality of the cattle, and sickness in camp, as to put a stop to all operations. He resolved, therefore, to bury the battering guns and retire to Bangalore till the rains were over. Abercromby was also forced to return to the coast. At Chinkuráli, the two divisions of the Mahratta army, under Hari Pant and Parasu Ram Bhao, most unexpectedly made their appearance, and the sufferings of the troops were somewhat relieved by the supplies they brought. The Mahrattas had taken Dharwar and reduced all the places north of the Tungabhadra. The army of Nizam Ali had captured Kopál, Bahadur Bandar and Ganjikota, and obtained the submission of all places in the north-east except Guramkonda.

It was now arranged that the British should take possession of the hill forts and places in the east, in order to open free communication with Madras ; that the Mahrattas, who obtained a loan from the Governor General of 15 lakhs of rupees, should proceed to Sira under Parasu Ram Bhao and operate to the north-west, Hari Pant remaining with the English camp ; and that the Nizam's force should operate to the north-east against Guramkonda. Between July and January, the English having taken Hosur, Rayakota and all places to the east, succeeded in capturing the hill forts of Nandidroog and Sávandroog, deemed impregnable, as well as Hutridroog, Ramgiri, Sivangiri and Hulyuroog. The Mahrattas, bent on plunder, after placing a corps in Dod

Ballapur and one near Madgiri, and making some fruitless attempts against Chitaldroog, went off towards Bednur at the time they should, according to the plan concerted with the allies, have been marching to Seringapatam. Hole Honnur was taken by them, and near Shimoga a battle was fought, in which the Mysoreans were worsted. But the Mahratta detachment left at Madgiri was completely routed by a force under Kammar ud Din, on which the garrison of Dod Ballapur withdrew to Bangalore in alarm, leaving the way open for a relief of Guramkonda. The Mysore forces sent south to act upon the communications of the English were generally unsuccessful, but Coimbatore surrendered after a long and brave defence, the garrison being marched off as prisoners to Seringapatam in violation of the terms of capitulation.

All the arrangements for the siege of Seringapatam being now matured, communications free and supplies abundant, the English army under Lord Cornwallis marched from Hulyurdroog on the 25th of January 1792, accompanied by the Nizam's force under one of his sons Sikan-dar Jah, and a small party of the Mahrattas under Hari Pant. General Abercromby, who had returned to Malabar in November, also marched from the head of the western passes on the 22nd of January.

Lord Cornwallis encamped on the 5th of February 6 miles north of Seringapatam. The Sultan had made every effort to strengthen the defences during the past six months, and was now encamped on the north. He had persuaded himself that nothing decisive would be undertaken until the arrival of General Abercromby's army, now at Periyapatna. But Lord Cornwallis resolved to attack at once, on the night of the 6th. The English force was formed into three columns, without artillery, the centre being commanded by the Governor General in person. Under a brilliant moonlight, the three columns marched in dead silence, at about 8 o'clock, towards the Sultan's encampment. The head of the centre column was discovered by his advanced outposts about 11, and they galloped back to give the alarm. But still perfect silence was preserved, while the pace was redoubled. In a quarter of an hour the Mysore lines were entered. Though a damaging fire was opened on the advancing columns, they remained steady, and carried every point with the bayonet. The Mysoreans fled panic-stricken. Victors and vanquished crossed the river and gained the island together, and would probably have entered the fort simultaneously had not the gates been closed and the bridge drawn up to exclude the foe. The petta of Shahar Ganjam was taken

with ease, as were all the batteries and redoubts, except one, which was the scene of a sanguinary struggle before its capture.

The Sultan, at the commencement of this eventful night, had made his evening meal in a redoubt to the right of the spot where the centre columns had entered. On the first alarm he mounted, but before he could get news of the nature of the attack, the crowds of fugitives announced that the enemy had penetrated the camp. He fled precipitately to the ford, and barely succeeded in passing over before the advanced column of the enemy. Taking his station on an outwork of the fort which commanded the scene, he remained there till morning, issuing orders and spending one of the most anxious nights in his life. During the confusion 10,000 Coorgs, who had been forcibly converted, made their escape to their own country; and a number of French and other Europeans, who had rendered unwilling obedience to Haidar and Tippu, seized the opportunity to gain their liberty. It so happened that a large treasure was in camp that night for the purpose of paying the troops next day. But it was all safely conveyed into the fort by the skill and ability of Purnaiya, although he was severely wounded.

The whole of the next day the most vigorous attempts were made to dislodge the English from the island. The sultan's passionate appeal, 'Have I no faithful servants to retrieve my honour?' was gallantly responded to by a body of 2,000 cavalry; but being foiled at every point, all the redoubts north of the river were evacuated the same night, and promptly occupied by the English.

Various efforts at negotiation had been made by Tippu since Lord Cornwallis took command of the army, but they were not calculated to succeed. He now resumed the matter, but was informed that the release of the prisoners taken at Coimbatore in violation of promises was indispensable as a preliminary. He therefore set free the officers, and sent letters containing offers of peace by them. But—at the same time he secretly despatched a body of horsemen in disguise to penetrate to the English camp and assassinate the Governor General. The plot was discovered and frustrated.

General Abercromby crossed the river at Yedatore and joined the main army on the 16th, and the dispositions for the siege were rapidly pushed on. Negotiations at the same time continued, and on the 22nd the envoys of Tippu brought him the ultimatum of the confederates, requiring the cession to the allies, from the countries adjacent to theirs, of

one half of the dominions which he possessed before the war ; the payment of three crores and thirty lakhs of rupees, one half immediately, the remainder in three instalments of four months each ; the release of all prisoners from the time of Haidar Ali; and the delivery of two of his sons as hostages. On the 23rd, Tippu assembled all the principal officers in the mosque and sought their advice. They unanimously offered to lay down their lives in defence of the capital, but hinted with various shades of expression that the army was disheartened and unreliable. After a great mental struggle, the preliminary articles, duly signed and sealed, were returned to Lord Cornwallis the same day. The two young princes surrendered as hostages, one aged ten and the other eight, were received in the English camp with every consideration due to their rank, and by Lord Cornwallis with all the tenderness of a father.

The territories to be ceded formed a lengthened subject of discussion, and the claim of the English to Coorg so exasperated Tippu that the peace was on the point of being broken, when he yielded. The English obtained Malabar and Coorg, Dindigal and Baramahal: the Mahratta boundary was extended to the Tungabhadra; Nizam Ali recovered his possessions to the north of that river and Kadapa to the south. Thus ended the third Mysore war.

After the departure of the confederates, the Sultan, brooding over the heavy losses he had sustained and the deep wounds that had been inflicted on his pride, shut himself up for several days in an agony of despair. His first public act was to make arrangements regarding the money due under the treaty. It was resolved that one crore and ten lakhs of the total amount should be paid from the treasury, that sixty lakhs should be contributed by the army, and one crore and sixty lakhs by the civil officers and inhabitants at large under the head of nazarana. The oppression of the population in levying the last drove great numbers to seek an asylum in Baramahal and other neighbouring districts, though there was a large balance standing in the accounts for several years afterwards.

The Sultan's caprice, fanaticism and spirit of innovation increased with his misfortunes, and were carried to the verge of insanity. 'The professed and formal regulations for the conduct of affairs had commenced before his departure from Mangalore, with the aid of his great innovator Zain-ul-Ab-i-Din; and embraced either directly or incidentally every department in the science of government. Regulations military,

naval, commercial and fiscal ; police, judicature, and ethics ; were embraced by the code of this modern Minos : and his reformation of the calendar and of the system of weights and measures, was to class him with those philosophical statesmen and sovereigns of whose useful labours the secretary had obtained some obscure intelligence. It may be briefly stated regarding the whole, that the *name* of every object was changed : of cycles, years, and months ; weights, measures, coins ; forts, towns ; offices military and civil, the official designations of all persons and things without one exception'—a singular parody of what was transpiring in France. The administration itself was named the *Sarkār Khodādād* or God-given Government. Persian was introduced for all words of command in the military regulations, and the same language used for the revenue accounts in preference to that of the country. The construction of a navy to vie with that of England was proposed. An improvement of the fortifications of Seringapatam was also commenced, and labourers impressed from all parts of the country for the work.

The fiscal and revenue arrangements consisted principally in the prohibition of all exports and imports, for the protection of domestic trade ; and the interdiction of the growth of poppy seeds, with the abolition of liquor shops to check intoxication. A board of trade was also organized, with a new code for its guidance ; and it was in contemplation to have established something like a bank, while the state itself monopolized the profits of money changers. Lands and money allowances granted to Hindu pagodas, as well as the service inams of patels, were confiscated ; and an income was raised by dividing the houses in the fort of Seringapatam into separate wards for different classes, and putting prices upon them. The revenue regulations of Chikka Deva Raja, however, remained unaltered ; but they were republished as the ordinances of the Sultan himself. He strove, in short, to obliterate every trace of the previous rulers. For this purpose even the fine irrigation works, centuries old, of the Hindu Rajas were to be destroyed and reconstructed in his own name.

As regards selections for offices, the Sultan fancied that he could discover by mere look the capacity of a person, which naturally resulted in the most absurd blunders.* The manner in which complaints were heard and disposed of may be illustrated by a single example. A num-

* All candidates for every department were ordered to be admitted and drawn up in line before him, when looking steadfastly at them he would as if actuated by inspiration call out in a solemn voice—'Let the third from the left be Asoph of such a district ; he with the yellow drawers understands naval affairs, let him be Mir e Yem, Lord of the Admiralty : he with the long beard and he with the red turban are but Amils, let them be promoted ; &c., &c. Wilks II. 289.

ber of ryots appeared on a certain occasion before their sovereign to complain of exaction. Mir Sadak, the divan, admitted the fact and said it was made on account of *nazarana*, which silenced the sultan at once. The divan, however, holding out to the ryots a hope of future immunity, succeeded in inducing them to agree to pay thirty-seven and a half per cent additional, and this circumstance being brought to the notice of Tippu as demonstrating the falsehood of their former complaint, the patel or head man was hung on the spot, and the increase extended to the whole of the Mysore dominions.

By 1794 the money due under the treaty was paid, and the hostages were returned to the Sultan at Devanhalli, now called Yusufabad. In 1796 Chama Raja Wodeyar, the pageant Raja, died of small pox. The practice of annually exhibiting him on the throne at the Dasara had been kept up, but now Tippu considered the appointment of a successor unnecessary, removed the family to a mean dwelling and plundered the palace of everything.

Tippu next strained every nerve to form a coalition for the expulsion of the English from India. Embassies were despatched at various times to the Ottoman Porte and to the court of Cabul; letters were exchanged with Arabia, Persia, and Muscat; and agents employed at Delhi, Oude, Hyderabad and Poona, the object sought in the two last named courts being twofold, namely, an alliance with the sovereigns themselves, and the seduction of their officers from them. Even the princes of Jodpur, Jaypur and Kashmir did not escape an invitation to join this mighty coalition. The French in particular were repeatedly applied to.

At last, in the early part of 1797, stress of weather drove a French privateer to the coast of Mangalore, having on board an obscure individual by name Ripaud. This person represented himself to be the second in command at the Isle of France, and being sent to Seringapatam by Ghulam Ali, the former envoy to the court of France, was honoured with several interviews with the Sultan. In the course of these he took occasion to extol the power and magnify the resources of his countrymen, and added that a considerable force was assembled at the Isle of France waiting for the Sultan's summons. Tippu took the hint, commissioned Ripaud to proceed to the Mauritius, conveying with him two servants as ambassadors to the government of that island, with letters. The embassy left Seringapatam in the month of April 1797, but did not embark till October.

The embassy reached the Isle of France in January 1798, and, in spite of the obvious necessity for secrecy, was openly received by Malartic, the French Governor, with distinguished marks of respect. The *kurreetahs* were read with all solemnity in a council, and were found to contain a proposal for a coalition to expel the English. To the great disappointment of the ambassadors, there was not a single soldier available; but to make amends, the Governor sent the Directory at home a duplicate of the Sultan's *kurreetah*, and deputed two officers, by name Chapuis and Dubuc, to reside at the court of Seringapatam. At the same time he issued a public proclamation, dated the 30th January 1798, inviting the people of the island to join the Sultan's standard. The result of these measures was that the embassy, which was intended to have conveyed an armament sufficient to have swept the English off the face of India, returned with ninety-four men, the refuse of the Isle of France, burning with a zeal for 'liberty and equality'.

A Jacobin club was formed in Seringapatam, a tree of liberty set up crowned with the cap of liberty, and the Sultan, who looked upon the general denunciation of kings and rulers as directed against the English alone, enrolled as *citizen Tippu Sultan*. At the same time M. Dubuc himself was sent in July 1798 with two Muhammadan envoys to the French Directory. Buonaparte's sudden invasion of Egypt now took place, encouraging the hope of immediate French intervention; and Dubuc, who did not actually sail till the 7th of February, assured Tippu that they must have already embarked on the Red Sea for his assistance.

But Lord Mornington, then Governor General, was fully aware of these hostile preparations; and when a copy of Malartic's proclamation reached his hands, deemed it high time to put a check on the Sultan's designs. The French force at Hyderabad was dismissed by a master-stroke of policy, and the Nizam and Peshva united in stronger bonds of alliance with the British. This being effected, the Governor General wrote to the Sultan on the 8th November 1798, giving expression for the first time to the feelings awakened by his late proceedings in gentle and cautious language, informing him that certain precautions had been adopted for self-defence, offering to depute Major Doveton on the part of the allies to explain the means by which a good understanding might be finally established, and desiring Tippu to state when he intended to receive him.

On the 10th of December, he wrote again, calling the Sultan's attention to the above, and requesting to be favoured with a reply at Madras, whither the Earl of Mornington was about to proceed as being nearer the scene of action. On reaching Madras on the last day of the month, the Governor General found a reply waiting for him dated the 25th. This letter opened with the intimation of Tippu's joy at the brilliant naval victory of the Nile over the French, of which he had been advised by the Governor General, and a wish for greater success. He explained away the embassy to the Isle of France as being simply the trip of a merchantman that conveyed rice and brought back some forty artificers, an incident which, it was alleged, had been distorted by the French. The Sultan added also that he had never swerved from the path of friendship, and could not see more effectual measures for establishing it than those that already existed.

The Governor General replied on the 9th of January 1799, exposing the whole affair of the mission to the Isle of France, which had rendered the demand of further security necessary; expressing a wish still to listen to negotiations, and allowing one day's time for a reply, with a significant warning that "dangerous consequences result from the delay of arduous affairs." This letter was accompanied by a copy of the manifesto issued by the Ottoman Porte, declaring war against the French. After the lapse of more than a month, or on the 13th of February 1799, the Sultan replied, with utter disregard, that he was proceeding on a hunting excursion, and desired that Major Doveton might be sent "slightly attended." The Governor General interpreting this as contempt and as an effort to gain time, ordered at once the march of the troops, informing the Sultan of the same.

Tippu first went to Maddur to oppose the Carnatic army, but subsequently changing his mind, left a detachment at that place under Purnaiya and Syad Sahib, and hastened in three days to Periyapatna to meet the Bombay force under General Stuart, which had already ascended into Coorg. The romantic Raja of Coorg discerned on the morning of the 5th March, from the summit of the Siddésvara hill, the plain near Periyapatna dotted with tents, including a green one, and flew to the English with the news. But the dawn following Tippu's force was in motion. A fog and the dense jungle screened its approach till the advanced British line was attacked both in front and rear. The small band sustained the conflict for several hours, till General Stuart coming up, the Mysoreans were entirely routed.

Meantime, in the east, General Harris in command of the grand army crossed the Mysore frontier by way of Rayakota unopposed, and selecting the Kankanhalli road, arrived with his troops on the 27th March 1799 at Malvalli, within forty miles of Seringapatam. Here the Mysorean army was drawn up on the heights two miles west of the town and threatened the advance. A general action ensued, from which Tippu was forced to retreat with loss.

Anticipating that the British army would take the same route to the capital which had been taken in 1792, Tippu had destroyed all the forage in that direction, but General Harris defeated his project by crossing the Kávéri at Sosile. When the intelligence of this skilful movement reached the ears of the Sultan, he was deeply dejected. Assembling a council of his principal officers at Bannur, "We have," he observed with great emotion, "now arrived at our last stage:"—intimating that there was no hope,—“What is your determination?” “To die with you,” was the universal reply, and the meeting broke up bathed in tears, as if convened for the last time. In accordance with the deliberation of this assembly, the Sultan hastened to the southern point of the island, and took up his position at the village of Chandagal; but General Harris again thwarted his plans, and making a circuit to the left, safely reached the ground towards the west occupied by General Abercromby in 1792, and sat down before the capital on the 5th April, or exactly in the space of a month from the date of his crossing the frontier.

Since the year 1792, a new line of intrenchments had been constructed on this side of the fort, from the Daulat Bagh to the Periyapatam bridge, within six or seven hundred yards from the fort, thus avoiding the fault of the redoubts in 1792, which were too distant to be supported by the guns of the fort. The Sultan's infantry was now encamped between these works and the river, and on the same evening on which the British army took up its position a portion was attacked by Colonel Wellesley, the future hero of Waterloo. Although this first attempt failed, success was achieved on the following morning, and strong advanced posts were established within 1,800 yards of the fort, with their left on the river and their right at Sultanpet.

General Stuart safely effected his junction with the main army on the 14th, notwithstanding the active and well conducted exertions of the Mysore cavalry under Kammar ud Din Khan to check his progress. He took up his position on the north side of the fort. The regular siege

may be said to date from the 17th, and it was decided ultimately to storm at the western angle, across the river.

Tippu, in order to open communications, had written to General Harris on the 9th, affecting ignorance of the cause of hostilities ; on which he was referred to the Governor General's letters. He now on the 20th proposed a conference, and was furnished in reply with the draft of a preliminary treaty, to be executed in 24 hours, the principal conditions of which were—the cession of half of his remaining territories, the payment of two crores of rupees in two instalments, and the delivery of four of his sons and four of his principal officers as hostages. But the time passed without his accepting it. A sortie on a large scale was repulsed by the besiegers, who pushed on their operations with vigour, till on the 27th the Mysoreans were driven from their last exterior line of defence.

The Sultan now again attempted negotiation, and was informed that the terms previously offered would be held open till 3 o'clock next day, but no longer. From this time despair seemed to brood over him. Supernatural aid was sought both by the incantations of Brahmans and the prayers of Muhammadan *mullas*, while the stars were consulted and solemn ceremonies of divination performed with the view of ascertaining what was decreed in the book of fate. But his officers were more alive to their duty at such a crisis. Meanwhile the approaches and breaching batteries of the besiegers were steadily advancing, and, on the morning of the 2nd of May began to form the breach, which next day was reported practicable.

Before day-break on the memorable 4th of May, the assaulting party, consisting of two thousand four hundred and ninety-four Europeans, and one thousand eight hundred and eighty-seven natives, under the command of General Baird, had taken their stand in the trenches, with scaling ladders and other implements ready. The Sultan had persuaded himself the assault would never be made by daylight. One o'clock, however, had been decided on as the hour.

At that precise moment, General Baird, eager to avenge the hardships he had suffered within the walls of Seringapatam and the secret massacre of his countrymen, stepped forward from the trenches in full view of both armies, and drawing his sword, called on the soldiers in a tone which thrilled along the trenches to "follow him and prove worthy of the British name." His men rushed at once into the bed of the river. Though immediately assailed by musketry and rockets, nothing could

withstand their ardour, and in less than seven minutes the forlorn hope reached the summit of the breach, and there hoisted the British flag, which proclaimed to the world that the fate of Mysore was decided.*

For fourteen days preceding, the Sultan, who could not be convinced that the fall of his capital was so near at hand, had taken up his quarters in the inner partition of the Kalale Diddi, a water gate through the outer rampart on the north face of the fort. The general charge of the angle attacked had been committed to Syad Sahib, his father-in-law, assisted by Sayad Gaffur, formerly an officer in the British service, who was taken prisoner with Colonel Brathwaite and was now serving Tippu. The eldest of the princes with Purnaiya commanded a corps intended to disturb the northern attack, and the second prince was in charge of the Mysore gate and the southern face of the fort, while Kammur ud Din was absent watching Colonel Floyd. Syad Sahib had sent a message in the morning that the fatal hour of storming was drawing nigh, but the Sultan replied that it would not be by daylight. He had ordered his midday repast, but had scarcely finished it when the report was made to him of the actual assault. Hastily arming, he heard that Syad Gaffur had been killed. "Syad Gaffur was never afraid to die," he said, and ordered another officer to take his place. He then mounted the northern rampart with a few attendants and eunuchs, and when within two hundred yards of the breach fired several times with his own hands at the assailants, under the cover of a traverse. But seeing that his men had either fled or lay dead, and that the assailants were advancing in great numbers, he retired along the rampart, slightly wounded, and meeting one of his favourite horses, mounted him, and proceeded eastward till he came to the gateway leading into the inner fort, which he entered with a crowd of fugitives.

A deadly volley was poured into this crowded passage by a portion of the storming party. Tippu received a second and third wound, and his horse was struck, while the faithful Raja Khan, who still clung to his master's side, was also hit. Raja Khan advised him to discover himself. "Are you mad? Be silent," was the prompt reply. He then made an effort to disengage his master from the saddle, but both master and servant fell in the attempt on a heap of dead and dying. Tippu's other

* The capture of Seringapatam and glorious termination of the Mysore War were celebrated with great rejoicings and a day of public thanksgiving throughout the British possessions, and the anniversary of the event was specially observed for many years after. As an indication of the progress made in communications since that time it may be noted that the news did not reach London till the 13th of September.

attendants obtained a palankeen and placed him in it, but he contrived to move out of it. While he lay with the lower part of his body buried underneath the slain, the gold buckle of his belt excited the cupidity of a soldier, who attempted to seize it. Tippu snatching up a sword made a cut at him, but the grenadier shot him through the temple, and thus terminated his earthly career. He was then in his forty seventh year and had reigned seventeen years.

So long as the Sultan was present, a portion of his troops on the north side made efforts at resistance, and his French corps persevered in it for some time longer, but they were soon quelled. Immediately after the assault, General Baird hastened to the palace in the hope of finding the Sultan. The inmates, including two princes who were themselves ignorant of his fate, solemnly denied his presence, but the doubts of the General were not satisfied. The princes were assured of protection and removed under military honours to the British camp, and the palace was thoroughly searched with the exception of the zenana, but all to no purpose. At last the General's threats extorted from the unwilling kille-dar the disclosure of the secret that the Sultan lay wounded in the gate; and here, after a search in the promiscuous and ghastly heap of slain, the body was discovered. It was removed to the palace in a palankeen and next day consigned with all military honours to its last resting place, at the Lál Bágh by the side of Haidar Ali. The solemn day closed with one of the most dreadful storms that ever visited this part of the country.

"Haidar was born to create an empire; Tippu to lose one,"—was the proverbial opinion, based on the prediction of the former and an observation of their respective characters. It was justified by the events, and forcibly sums up the merits of the two Musalman rulers of Mysore.

The town suffered plunder for a day, and at last guards having been placed over the houses of the respectable persons, and four of the plunderers executed, the soldiery was effectually restrained, and tranquillity restored. This event was followed by the surrender of Fattéh Haidar, the eldest of the sons of Tippu, and of Purnaiya, Kammar-ud-Din Khan and other officers, on the following day. Circular orders were issued by General Harris, accompanied by communications from the Meer Soodoor, to the officers in charge of the different forts in the territories, to deliver their charges to the British authorities, and giving them general assurance of favour and protection. By these means the country sub-

mitted, the ryots returned to their peaceful occupations and the land had rest from the incessant warfare of the past fifty years.

The disposal of the conquered territories engaged attention next. After a mature deliberation of the various interests involved in the question, the restoration of the descendant of the Rajas of Mysore to the sovereignty under British protection of a part of the dominions, and the division of the remainder between the allies, were the measures resolved upon.* The British share consisted of all the districts below the Gháts lying between their possessions on the eastern and western coasts, namely Canara, Coimbatore, &c., with such posts and fortresses as commanded the passes ; and the island of Seringapatam. To the Nizam were assigned the districts of Gutti and Guramkonda, bordering on the cessions made in 1792, together with all the country north from Chitaldroog and Sira. For the Mahrattas, whose forces were not present at the siege, were reserved, on certain conditions, Harpanhalli, Sunda and Anegundi, with parts of the districts of Chitaldroog and Bednur above the Ghats ; but as they would not agree to the terms of the proposed treaty renouncing a claim to plunder, these districts were divided between the British and the Nizam.

The sons of Tippu were provided with liberal allowances, and removed from the scene of their former greatness to the fortress of Vellore.† The principal officers of the late government were divided into three classes, according to their respective ranks, and pensioned ; the stipends varying from three thousand to two hundred and ten star pagodas per annum. To Mir Kammar-ud-Din Khan were assigned two jaghirs, one from the Company and the other from the Nizam, and he was permitted to reside at Guramkonda. Purnaiya, who had been the principal financial minister under the late government, having given satisfactory proof of his readiness to serve the new one in the same capacity, it was deemed advisable to appoint him Divan to the young Raja. All negotiations regarding the revival of the kingdom of Mysore were considerably postponed till the departure of the sons of the sultan from the capital, which took place on the 18th of June 1799.

Subsequently, in 1800, the Nizam ceded to the British the territories acquired from Mysore in 1792 and 1799, in return for a force of British

* By a Commission composed of General Harris, Colonel Wellesley, the Honourable Henry Wellesley, Lieut.-Colonel William Kirkpatrick, and Lieut.-Colonel Barry Close, the Nizam concurring.

† Five years later they were removed to Calcutta.

troops to be stationed at Haidarabad. And in 1803, Holalkere, Mayakonda and Harihar districts were given to Mysore by the British Government in exchange for parts of Punganur, Wynad, Yelusavirasime, and some other places contiguous to their boundary.

Purnaiya was now Divan and Regent, Colonel (afterwards Sir Barry) Close was Resident and Colonel Arthur Wellesley (the future Duke of Wellington) commanded the Division. The combined influence of such a triad was a sufficient guarantee for all that could render the State secure and prosperous. The disturbances caused by the Aigur chief in Manjarabad, and by Dhundia Wahag* in the north-west were soon quelled. Purnaiya's thorough knowledge of the resources of the country enabled him to add materially to the revenue, which was further swelled by the sale of the large stores of sandalwood which had accumulated for several years owing to Tippu's prohibition of its export from his dominions; so that although the Mysore State, according to treaty, kept a considerable body of troops in the field during the Mahratta war, the treasury continued to fill. The Governor General in 1804 recorded it as his deliberate declaration, that during the past five years "the affairs of the government of Mysore had been conducted with a degree of regularity, wisdom, discretion and justice unparalleled in any Native State in India." Beyond advice from the Resident, little interference with internal affairs was called for during the administration of Purnaiya, which continued till 1810. 'The knowledge of the right of interposing had proved sufficient of itself to prevent any frequent or urgent necessity for its exercise, and to secure in a respectable degree the protection of the people in the enjoyment of their most important rights.'

Purnaiya's system of government was no doubt absolute ; and, as a financier, the accumulation of surplus revenue presented itself to him as a prime end to be attained. It may be questioned, therefore, whether he did not to some extent enrich the treasury at the expense of the State, by

* He was a Mahratta by descent, and a native of Channagiri. From 1780, he served as a horseman in Haidar's army, but during the invasion of Lord Cornwallis decamped with a few followers and as much booty as they could get hold of to Dharwar, where he lived by plundering. In 1794 he was induced to come to Seringapatam with the prospect of being received into Tippu's service with all his followers, consisting of two hundred horse. But refusing to embrace Islam, he was forcibly converted and thrust into prison. At the capture of Seringapatam he was found chained to the wall like a wild beast, and the British soldiers out of pity at once freed him. He then escaped to the Mahratta country, and collecting a large force committed many depredations in the north-west. In 1800, having assumed the title of 'King of the Two Worlds,' he threatened the Mysore frontier with a body of 5,000 horse. Colonel Wellesley went against him, and pursuing him for months from point to point without being able to come up with him, at last succeeded in surprising him, when this freebooter's army was entirely routed and he himself killed in a cavalry charge led in person by his distinguished opponent.

narrowing the resources of the people ; for by 1811 he had amassed in the public coffers upwards of two crores of rupees. He was a minister of the old school and viewed with chagrin any attempts which the Raja, as he came to years of discretion, made to assert his prerogatives. This provoked the resentment of the young Raja, surrounded as he was by parasites who constantly urged him to take the government into his own hands. In 1811 he expressed to the Resident a wish to govern for himself. The latter endeavoured to secure a share in the administration for Purnaiya, but the latter declined office in the position of a subordinate, and retired to Seringapatam, where he soon after died.

Krishna Raja Wodeyar, then about 16 years of age, commenced his rule under the most favourable auspices, with a treasury well filled and the good wishes of the whole country. But he was entirely without experience and no guarantees for the continuance of good government had been required or imposed by his too liberal protectors, who generously credited him with being sufficiently alive to his own interests not to need any such restrictions on his power. Flatterers and parasites, however, gained too ready an ear, and in 1814 the Resident was compelled to report that the Raja had already dissipated on worthless persons the treasure accumulated by Purnaiya, while the pay of his troops was several months in arrears. Though possessed of great natural intelligence, he lacked the administrative ability which was essential for governing the country, and was yet too jealous to delegate the necessary authority to the Divan. While the Resident's advice was disregarded, a lute player named Venkat Subbaiya, and other indifferent characters, obtained an extraordinary influence over him. The disinterested counsels of the few respectable native gentlemen at his court met with no more attention than those of the Resident, and although sharply rebuked by the British Government and warned of the inevitable result of his extravagance and sensuality, the Raja turned a deaf ear to all remonstrance. In 1817, he was foolish enough to enter into political intrigues which gave umbrage to the British, though they did not proceed from want of loyalty on his part.

‘ All remonstrances failed to check the Raja's downward course. High offices of state were sold to the highest bidder while the people were oppressed by the system of *sharti*, which had its origin under Purnaiya's regency. *Sharti* was a contract made by the Amildar that he would realize for the Government a certain amount of revenue ; that if

his collections should fall short of that amount he would make good the deficiency, and that if they exceeded it the surplus should be paid to the Government. The amount which the Amildar thus engaged to realize was generally an increase on what had been obtained the year preceding. In the *muchalika* or agreement the Amildar usually bound himself not to oppress the ryots, nor impose any new taxes, nor compel the ryots to purchase the government share of garden, but this proviso was merely formal; for any violation of the contractors in any of these points when represented to the Government was taken no notice of. The consequence was that the ryots became impoverished, the revenues more embarrassed, and the Amildars themselves frequently suffered losses. The distress arising from this state of things and from the neglect of duties incumbent upon government, fell heavily upon the ryots, who groaned under the oppression of every tyrannical *shurti* Faujdar and Amildar.'

Once, in 1825, the venerable Sir Thomas Munro, Governor of Madras, actuated by a sincere desire to avert the ruin which threatened the Raja, visited Mysore and remonstrated personally with him; but the effect of his advice was at best transient. 'It would be easier' he remarked 'to give a right direction to the conduct of the Mysore government under almost any other Prince than the present one; a weaker one would be more easily guided, an abler one would act more prudently for his own sake.' Between this time and 1831 matters went from bad to worse. The Resident, Mr. Cassamaijor, strove ineffectually to arrest the Raja's downfall, but did not succeed in securing his confidence. His Highness seemed destined to place his trust always in unworthy advisers.

In 1830 symptoms of disaffection began to shew themselves in the Nagar country. A Brahman named Rama Rao, from the Mahratta territory, who had served with credit under Haidar and Tippu as a commander of cavalry, had been appointed Faujdar of Nagar in 1799, and held that office till 1805. He afterwards became Bakshi of the Sowar Cutcherry, and was one of the Raja's most intimate counsellors and virtually the Dewan for a few years after Purnaiya's retirement. By his influence almost every public situation of importance in Nagar down to 1828 was, with a slight interruption, filled up by his dependents or relatives. Though charged with flagrant frauds and embezzlements, their conduct was shielded from scrutiny; while some of them even enriched themselves by giving encouragement to robbers—for whose operations the wild nature of the country offers many facilities—and partaking of the plunder. The

outstanding balances of revenue having accumulated to upwards of thirteen lakhs of rupees, the Bakshi contrived that he himself should be deputed to inquire into and settle the claims. He made large remissions, to the extent of $7\frac{1}{2}$ lakhs, and returned to the Darbar in 1828. The Raja being led to question the propriety of these proceedings, resolved to appoint a relative of his own named Vira Raj Arasu as Faujdar. The latter discovered that much fraud had been practised in the remissions, and re-imposed the claims, which naturally excited dissatisfaction in those affected. The Bakshi's party, also, fearful of the consequences to themselves if the inquiries which Vira Raj Arasu was pursuing should expose the corruption and malversation they had practised during so many years, connived at the seditious proceedings of a pretender to the throne of Nagar.*

In August, a force in his name attempted to surprise the fort of Anantapur, but failed. At the same period the ryots in various places assembled in *kúta* or indignation meetings. On the ground of these commotions, Vira Raj Arasu was recalled, and the former Faujdar of the Bakshi's party restored. He made use of troops to disperse the ryots at Hole Honnur on the 7th December, and several were killed and wounded. But they rallied near Honnali and were joined by larger numbers from all parts, who openly espoused the cause of the pretender. The Faujdar again attacked them with a regiment of horse and broke up the assembly. The Palegar of Tarikere now suddenly left Mysore and joined the insurgents, seizing on Kaldroog and Kúmandroog. The Faujdar of Bangalore also reported his Division to be in a general state of insurrection. Strong reinforcements of troops were sent to the disturbed districts in the Bangalore, Chitaldroog and Nagar Divisions; and the Raja set out with a considerable force on the 13th December for Chanráypatna, where it was proclaimed that the grievances of the ryots would be inquired into. Investigations were made by the Dewan

* This man, whose real name was Sádár Malla, was the son of a common ryot of Kumsi. Before the age of 20 he had been concerned in several robberies and spent two years in jail. He afterwards entered the service of a Jangama who had been priest of the last Nayak of Bednur and was possessed of his seal rings. These, on the death of the priest, Sádár Malla got hold of, and assuming the name of Bádi Basivappa, wandered about the country secretly giving out that he was a descendant of the Nagar family. About 1812 he was imprisoned for some time in Canara for robbery, and on release obtained a passport bearing the seal of the zillah court, in which was entered his name as he himself gave it, Bádi Basivappa Nagar Kháviind. This document was now exhibited as a sunnad from the East India Company recognizing his claims. These deceptions were effectual, and when the discontent to which we have alluded was at its height, taking advantage of it to promise a full remission of all balances and a reduction of the assessment, he was, about April 1830, formally recognized by several patels as the sovereign of Nagar.

for some days : several persons were hanged, others flogged or mutilated. Meanwhile there were encounters in various parts between the insurgents and the troops.

In January the Raja's camp was established at Hebbur, and the Dewan was despatched with troops against Kámandroog, while Annappa, an officer of cavalry, was appointed to supersede the Faujdar of Nagar. Annappa maintained an arduous conflict for several weeks with the insurgents, and was forced to take refuge in Anantapur. Here he remained till nearly starved, when addressing his troops, he said " Rather than die in this way of starvation, let us go and fight, and die like soldiers." They responded, and sallying forth on the Shikarpur road, fought their way stoutly for 15 miles to Masur in the Company's territory, whence they retreated to Harihar. The operations against Kámandroog failed, but Kaldroog was taken in February. British aid was now applied for, and a regiment started from Harihar. At the same time, Lieut. Rochfort, of the Resident's escort, taking command of the Mysore troops, captured Kámandroog on the 3rd of March, the palegars escaping during the assault. Hence Lieut. Rochfort marched to Shimoga, and hearing that a large body of insurgents had taken Honnali, he proceeded there and took it by assault on the 12th. He now marched west, and carrying several stockades, recovered Nagar or Bednur on the 26th, and Chandragutti on the 6th of April. Meanwhile, enriched by the plunder of district treasuries and other depredations, the rebel leaders were joined by bodies of armed men, both horse and foot. Attracted by the hope of plunder, 1,500 Candachar peons of the Bedar caste also deserted to them.

Owing to the increasing strength of the insurgents, the employment of the entire subsidiary force became imperative. One regiment had to retire from a fortified barrier at Fattepet, but the British forces being concentrated at Shimoga, moved on the 31st of May by a circuitous route to Nagar, which was taken on the 12th of June, and a death blow given to the insurrection. By the next month the majority of the ryots had returned to their villages under the protection of letters of cowl. But the rebel leaders continued at large with marauding bands, committing outrages and raising disturbances for many months.

* The state of Mysore had been for some time attracting the notice of the Government of India, and as it was considered that the insurrection was of so serious a character as to call for special inquiry, the

* I now quote from the political section of the Administration Report for 1872—3.

Governor General ordered the formation of a committee* to investigate the 'origin, progress, and suppression of the recent disturbances in Mysore.' Their report shewed that the misgovernment of the Raja had produced grave and widely-spread discontent, that the revenues were rapidly failing and that mal-administration was rampant in all departments of the State. The Governor General therefore determined upon acting on the fourth and fifth articles of the subsidiary treaty. In a letter addressed to the Raja, after recounting at some length and in forcible terms the circumstances under which the Raja had been placed on the throne, the objects of the subsidiary treaty, and the mismanagement, tyranny and oppression of the Raja's government; Lord William Bentinck went on to say, "I have in consequence felt it to be indispensable, as well with reference to the stipulations of the treaty above quoted, as from a regard to the obligation of the protective character which the British Government holds towards the State of Mysore, to interfere for its preservation, and to save the various interests at stake from further ruin. It has seemed to me that in order to do this effectually, it will be necessary to transfer the entire administration of the country into the hands of British officers; and I have accordingly determined to nominate two Commissioners for the purpose, who will proceed immediately to Mysore.

"I now therefore give to your Highness this formal and final notice, and I request your Highness to consider this letter in that light; that is, as the notice required by the treaty to be given to your Highness of the measure determined upon for the assumption and management of the Mysore territory in the case stipulated. I beg of your Highness, therefore, to issue the requisite orders and proclamations to the officers and authorities of Mysore, within ten days from the date when this letter may be delivered to your Highness, for giving effect to the transfer of the territory, and investing the British Commissioners with full authority in all departments, so as to enable them to proceed to take charge and carry on affairs as they have been ordered, or may be hereafter instructed." To the Raja, in accordance with the treaty, the sum of one lakh of star pagodas per annum was allotted for his private expenses.

The Raja peaceably surrendered the reins of government, and continued to reside in his palace at Mysore. The Governor General vested

* The members were Major General Hawker, Mr. W. Morison, Mr. (afterwards Sir John) Macleod, and Lieut.-Col. (afterwards Sir Mark) Cubbon.

the government in the hands of two Commissioners, the senior of whom was appointed by himself, and the junior by the Madras Government. The senior Commissioner, who possessed what was termed a 'casting vote' and was therefore enabled to overrule his colleague on every point, was aided in financial matters by the Divan, which latter post was not abolished until 1834. Up to June 1832 the Commissioners were under the Government of Madras, but in that month they were made immediately subordinate to the Government of India. It was soon found that a Board of two Commissioners, who naturally constantly differed in opinion, was an agency ill-adapted for the organization of a proper system of government. Accordingly, in April 1834, one Commissioner was appointed for the whole Province, and Colonel (afterwards Sir Mark) Cubbon took charge in June.

The necessity of a still more sweeping change in the administration soon afterwards became apparent. The instructions of the Governor General to the Madras Government on the first assumption of the Province had been to the effect that "the agency under the Commissioners should be exclusively native; indeed that the existing native institutions should be carefully maintained." These views were subsequently confirmed by the Court of Directors in their letter dated 25th September 1835, in which they stated that they were "desirous of adhering as far as can be done to the native usage, and not to introduce a system which cannot be worked hereafter by native agency." The above instructions were, as far as possible, adhered to in the early days of the Commission. But in process of time it became known that the machinery of government was rotten to the core. As an instance of mal-administration which prevailed, it may be mentioned that the courts of justice had no power to pass sentence, their prerogative being limited to the mere finding of 'guilty' or 'not guilty.' The Raja, who had retained the power of passing sentence, was too indolent to attend to business, and the result was that the jails had remained for years crowded with prisoners who, if guilty at all, were only guilty of light offences. The powers of the various descriptions of courts were ill-defined, and involved endless appeals. The evils involved by this state of things lay too deep to be remedied by one Commissioner aided by the existing native agency, and it was therefore determined to substitute four European Superintendents for the Native Faujdars. The Iluzur Adalat, composed of Native Judges, was allowed to remain the highest judicial authority in

the Province, but its sentences were made subject to the confirmation of the Commissioner, and not long afterwards a Judicial Commissioner was substituted for it. The post of Resident was abolished in 1843.

Such was the form of administration under Sir Mark Cubbon, who occupied the post of Commissioner until February 1861. The history of the Province under his rule is that of a people made happy by release from serfdom, and of a ruined state restored to financial prosperity. There was a gradual rise of the revenue notwithstanding that no less than seven hundred and sixty nine petty items of taxation were swept away.* In addition, the abuses in the working of the land revenue which had crept in since the time of Purnaiya were removed; the payment of the assessment was made as easy as possible to the ryot by dividing it into five instalments, payable with reference to the periods of harvest; the system of *batāyi* or payment of assessment in kind, which exposed the ryot to numberless exactions, was in great measure abolished, and the land assessment in many cases was lowered.¹

At the beginning of 1860 the intention was formed of transferring the superintendence of Mysore affairs from the Governor General to the Government of Madras, then under Sir Charles Trevelyan, thus reversing what had been done in 1832; but the step was so distasteful to the Raja, no less than to Sir Mark Cubbon, who tendered his resignation, that it was withdrawn. Early the following year Sir Mark was attacked with serious illness, which compelled him to resign, and he died at Suez on his way to England in April 1861, at an advanced age, having spent the whole of the century in India. He left Mysore full of honours as full of years, and his memory is cherished with affection by the people over whom he ruled so long.

Mr. Saunders, C. B., conducted the administration until February 1862, when Mr. Bowring succeeded, and with an interval of a year's leave in 1866—7, during which Mr. Saunders again officiated, held office until 1870. During this period many radical changes were effected. Mysore had hitherto been a non-regulation province. In 1862 the administration was reorganized on the model of the Panjab system, and other reforms set on foot all tending towards the introduction of the regulation

* Among these were such whimsical taxes as taxes on marriage, on incontinency, on a child being born, on its being given a name, and on its head being shaved. In one village the inhabitants had to pay a tax because their ancestors had failed to find the stray horse of a pular, and any one passing a particular spot in Nagar without keeping his hands close to his side had to pay a tax. All these taxes were formally entered in the government records as part of the resources of the state.

system. The Province was now formed into three Divisions, sub-divided into eight Districts, each Division being placed under a Superintendent with enlarged powers, and each District in charge of a Deputy Superintendent, aided by Assistant Superintendents. The department of finance underwent at the same time a sweeping reform, and in place of the large discretion previously allowed to officers of all grades in regard to the disbursement of moneys, the Indian Budget system of audit and accounts was introduced.

In 1863 was commenced a much needed revenue survey and settlement, for the purposes of obtaining an accurate land measurement, of regulating the customary land tax, and of preserving all proprietary and other rights connected with the soil. In conjunction with this, the field assessment was fixed for thirty years, thus securing to the cultivator the full advantages of a lease for that period without burdening him with any condition beyond that of discharging the assessment for the single year to which his engagements extend. Soon after, it was found necessary to form an inam commission, to inquire into the validity of titles to lands held by individuals or religious institutions as real or pretended endowments from the sovereigns of the country, considerable alienations of whole villages having been made during the administration of the Raja. The conservation of the numerous irrigation channels and of the valuable forests of the country received attention; and as judicial work grew heavier, judicial assistants were appointed, one for each District, for the disposal of civil suits. Education was greatly extended. Municipalities were established. In short there was scarcely a branch of the administration but came under the scrutiny and reforming hand of the untiring and energetic head of the government.

Mr. Bowring, C. S. I., who from 1869 was styled Chief Commissioner, resigned office at the beginning of 1870. His Indian experience and well-known acquaintance with the oriental classical languages enabled him to sympathize readily with native institutions and interests. The assimilation of the system of government therefore to that of the British Provinces, although it necessitated the introduction of a larger European element than before, was conjoined with the recognition of native merit and talent. Two out of the eight Districts were placed under the administration of native Deputy Superintendents, appointments which ranked among the highest anywhere held at that period by their countrymen. Many important judicial and other offices were filled in a similar

manner, and the way was left open for a more extensive employment of native agency.

Colonel (afterwards Sir Richard) Meade assumed charge in February 1870, and was unexpectedly called away five years later to the control of the Baroda State, where he had also for several months on another occasion (October 1873 to March 1874) been a member of the Commission for the trial of the Gaikwar. His administration of Mysore was therefore subject to unlooked for interruptions of a harassing nature. Among the more important measures of this period, a great impetus was given to public works, in raising all works of irrigation to a complete standard of repair and efficiency, in opening out communications in the remotest and most difficult parts of the country, in surveys for railway extension, and in the erection of public buildings and carrying out of local improvements in towns. Education continued to flourish. A topographical survey, the planting of village topes, improvements in agriculture, and other useful works were set on foot. In 1871, sub-divisions composed of groups of taluks were constituted, and an Assistant Superintendent placed in charge of each, the object being to bring government officers into closer communication with the people and to give the Assistant Superintendents a greater interest in their work.

In 1873 the designation of Commissioner was substituted for Superintendent through all the grades; and in the same year, an important measure for the establishment of Munsiffs' courts, with purely civil jurisdiction, was brought into operation. The amildars were thus relieved of jurisdiction in civil cases, and the judicial powers of other officers greatly modified. The re-organization of the police was commenced, one of the principal features of the scheme being the recognition of the village police, and its utilization after being placed on a reasonable footing of efficiency. The local military force, somewhat reduced, was greatly improved by proper selection of men and horses, and by the enforcement of a regular course of drill. Native agency was systematically introduced into every department. Special training was provided for preparing native officers for the Public Works, Survey and Forest Departments, and young men of good family were appointed as Attachés, with the view of enabling them to gain experience in civil and revenue matters before being entrusted with responsible charges.

* In order to close this historical summary it is only necessary to recur briefly to political affairs. The Raja, until his death in 1868, con-

* From the Administration Report for 1872—3.

tinued to reside at Mysore. He had no political power, but the assignment to him of a fifth of the revenue of the Province for his personal expenditure, enabled him to give reins to the princely liberality which formed one of the main elements of his character. In June 1865 he adopted a scion of one of the leading families of his house, who on his adoption received the name of Cháma Rájendra. Whether the British Government would recognize this adoption was for some time doubtful. In April 1867 the Home Government decided that it should be recognized. Accordingly, on September 23rd 1868, six months after the death of Krishna Raja, his successor Chama Rajendra Wodeyar, at that time between five and six years of age, was duly installed at Mysore.

The following proclamation by the Governor General issued on the death of Krishna Raja Wodeyar may not inaptly close this historical summary.

"His Excellency the Right Honorable the Viceroy and Governor General in Council announces to the Chiefs and people of Mysore, the death of His Highness the Maharaja Krishna Raja Wodeyar Bahadur, Knight Grand Commander of the Most Exalted Order of the Star of India. This event is regarded with sorrow by the Government of India, with which the late Maharaja had preserved relations of friendship for more than half a century.

"His Highness Chama Rajendra Wodeyar Bahadur, at present a minor, the adopted son of the late Maharaja, is acknowledged by the Government of India as his successor and as Maharaja of the Mysore Territories.

"During the minority of His Highness, the said territories will be administered in His Highness' name by the British Government, and will be governed on the same principles and under the same regulations as heretofore.

"When His Highness shall attain to the period of majority, that is, the age of eighteen years, and if His Highness shall then be found qualified for the discharge of the duties of his exalted position, the government of the country will be entrusted to him, subject to such conditions as may be determined at that time."

The young Raja resides at Mysore under the guardianship of a European officer, whose supervision will preserve him during his childhood from the demoralizing influences which contributed to his adoptive father's failure as an administrator. Every endeavour

is being made to impart a liberal and manly tone to his tastes, by careful education, by travel, and by encouraging him to vie in sports with companions of his own age. When the time comes for his accession to power, he will succeed to a flourishing exchequer, and to an administration organized in all its details, with its system of land revenue (that rock upon which most Hindu rulers split) thoroughly settled. Seldom will a monarch have assumed the reins of government under fairer auspices, and never will an Indian ruler have assumed the dominion of a Province richer in all the elements of material wealth.

INHABITANTS.

The aboriginal inhabitants of Mysore cannot probably be now traced with any degree of certainty, though remains of pre-historic races abound in stone monuments of various kinds, elsewhere described.

Several of the Puranas* claim an Aryan descent for the southern races by making their progenitors or eponyms, Pándya, Karnáta, Chola and Kerala, to be descendants of Dushyanta, the adopted son of Turvasu, who was the brother of Yadu, and a prince of the lunar line, and to whom his father Yayati, the son of Nahusha, gave the government of the south-east. He is also said to have been the progenitor of the Yavanas. Another account† substitutes Kola for Karnata. The former is a name which occurs extensively throughout India as the designation of a wide spread aboriginal race. If the two therefore are interchangeable, it would seem as if the people of Karnata were considered identical with the Kols of the Central Provinces.‡ The name appears in Kolar, after which the eastern District of Mysore is called, as well as in Kolála in the Túm-kúr District, &c. ; and the mention in the Maha Bharata of the conquest of 'the whole of Kolagiri and Surabhi-patna'§ taken in connection with the legends given in the last chapter relating to Parasu Rama, may perhaps point to the existence at a remote period of a Kolarian race throughout the north of Mysore, from the Kolar hills in the east to Sorab in the west, between which places there is an evident bond of some kind indicated by existing names and monuments.¶

* The Váyu, Matsya, Agni and Brahma Puranas.—MUIR, *S. T.* II, 422. † Harivamsa, *ib.*

‡ The tribes driven out of the valley of the Ganges by the Aryans were almost certainly Kols to the south, and semi-Tibetans to the north.—Dr. CALDWELL, *Gram. Drav. Lang.* Int. 63.

This may throw light on the origin of the Ganga vamsa line of kings, and of the large class of Gangadikára ryots. § MUIR, *Sans. Texts* II, 491.

¶ The generally received theory is that the Kolarian tribes are relics of barbarians who entered India from the north-east at some very remote prehistoric period: they were subsequently, perhaps three or four thousand years ago, pushed aside by Turanian immigrants from Western Asia, who penetrated India from the north-west and filled the western and southern districts: at a later period the Aryans came into India, also from the north-west, settled in the Panjab, and eventually spread, first east and lastly south, into all parts of the Indian continent.

As regards the south of the country it seems not unlikely that the Tudas or Todas of the Nilgiris may be representatives of primeval tribes there settled. Not only is their language Old Canarese (modified apparently by the exigencies of their present location*), but it is suggestive that they hold sacred the buffalo, from which animal Mahishúr (Mysore) derives its name. It might even be supposed that the legend of the conquest of Mahishásura by Chámundi is based on an historical fact,—a victory gained over the minotaur ruler of the Mahisha mandala, or buffalo kingdom, by adherents of one of the Saktis of Siva, in consequence of which the Tudas and other tribes were driven to take refuge in the mountains, but that its frequent occurrence as a subject of sculpture in other parts seems to indicate that the triumph was an event of wider and more national importance.

The Tudas have excited much interest as a race and as regards their origin. It was at one time held by some that they were Scythians, but it is now generally admitted that they are later arrivals than the race by whom the ancient monuments were constructed on which a Scythian descent was based.

In the last chapter, however, it was seen that the ancient history of the country leads us back, as one of the earliest known events, to the conquest by the Haihayas, presumably a Scythian people, of Mahishmati or Mahesvara-pura (in the Central Provinces), and its subsequent recovery by the emperor Sagara, sprung from the ejected native race, who thenceforward imposed on the vanquished the stigma of shaving their heads in peculiar modes as a mark of subjection. Now not only do the Tudas (in common with other supposed aborigines) wear their hair unshorn, but it is worthy of note that they are acknowledged as lords of the soil by the Koṭas, Baḍagas† and other tribes on the hills, also immigrants from Karnata‡ though of a later date, who pay them *gudu*, *kulu* or tribute; and that in virtue of this position the Tudas systematically abstain from all labour, unless milking their buffaloes can be described as such.

* The Tudas chiefly converse in the open air, calling to each other from one breezy hill top to another. Their speech sounds like Old Canarese spoken in the teeth of a gale of wind. ... The language seems to have been originally Old Canarese and not a distinct dialect. The Tudas were probably immigrants from the Canarese country and have dwelt on the Nilagiris for about 800 (? at least 1800) years.—DR. POPE, *Outlines of Tuda Gram.*

† The Baḍigas, northerners, are so called from *baḍaga*, the Kannada for north.

‡ Koṭa may be considered as a very old and very rude dialect of the Canarese, which was carried thither (the Nilgiri hills) by a persecuted low-caste tribe at some very remote period. ... The dialect spoken by the Burghers or Baḍagas (the northern people) is an ancient but organized dialect of Canarese.—DR. CALDWELL, *Gram. Drav. Lang.* Intro, 37.

Another early if not aboriginal race are probably to be found in the Hale Paika or Paiki, of the Nagar Malnad. Their name is said to be derived from *hale* and *páyika*, meaning Old Foot, as they furnished the foot soldiers and body guards of former rulers, to whom they were noted for their fidelity. Considering the locality which they chiefly inhabit, we may conjecture that they formed some portion of the so-called monkey army which assisted Rama in his expedition against Ceylon. A nearly corresponding tribe on the coast north of Honavar is called Kumára Paika, the Junior Foot. The principal occupation now of the Hale Paiki is the extraction of toddy from the bhagni palm (*caryota urens*), the cultivation of rice land, and of kans or woods containing pepper vines; but they are described as still fond of fire arms, brave, and great sportsmen. In Vastara and in Tuluva (S. Canara) they are called Bilvar or bowmen. In Manjarabad they are called Devara makkalu, God's children, which seems to support an aboriginal claim, and are *manle* and *gráma patels*.*

Still keeping to the hills we may probably set down the Kurubas of the south-western forests, and the Soligas of the Bilikalrangan hills on the south-east, as aboriginal tribes. The Kurubas extend to the Nilgiri hills, where the Badagas, who attribute to them great powers of sorcery, always at the time of ploughing employ a Kuruba to turn the first furrow, which may be emblematic of an ancient ownership in the soil, and a sort of acknowledgment that the Kuruba permits it to be cultivated. The Betta or Hill Kurubas of Mysore, a small and active race capable of en-

* The above was written before I had seen Colonel Marshall's book, in which the Todas have been interviewed and vivisected with a skilful though unsparing hand. It appears that the Paiki (spelled Peiki p. 2, Fyki p. 74) is the name of the highest clan of the Todas, from which alone the *pálals* or priests are taken, and that the latter style themselves *Dér makh* (that is, Devara makkalu), God's children. The *manle* of the Nilgiris is no doubt the *manle* of Manjarabad.

These coincidences, and others that might be pointed out, can hardly be accidental, and open up interesting subjects for investigation as to the difference in the present habits and character of the Paiki of the Nilgiris and the Hale Paiki of Mysore; also whether either developed out of the other or both had a common ancestry; and if so, which is nearest to the original. The latter, judging from the name alone, should be the older tribe.

'In the process of writing of them' says Colonel Marshall, of the Todas (p. 4), 'I have grown to the very strong conviction that the people are a surviving sample of some portion of the Turanian race when in its very primitive stage. Without much exercise of the imagination I can picture them the contemporaries and neighbours, even perhaps the ancestors, of races of south-western Asia which have made a figure in early history. There is much of the 'blameless Ethiopian' about them; something of the Jew and Chaldean in their appearance.' A note adds 'On the eve of sending this work to the press I would beg again to urge my belief in the connection between the Dravidian Toda and the Ethiop.'

The derivation *hale páyika* is questionable. I have seen *hale páyaka*, which would mean 'old drinkers' also given as the origin of the word. The occupation of toddy drawing may have suggested the latter. And if the peculiarity which Colonel Marshall has remarked in the Todas, that they always keep step in walking—said to be very unusual even among trained sepoy when off duty—be common to the *hale paiki*, it may have suggested the other. It is curious to note that Herodotus in his account of the presents sent by Cambyse to the Ethiopians (III, 20—22) particularly mentions a *flask of date wine*, and that their king, though distrustful of the other things, was delighted beyond measure with the beverage when he was informed how it was obtained. Also that he sent the Persian king a singular bow in return. (cf. *Phren. am. Todas* p. 215.)

during great fatigue, are expert woodmen : the Jenu or Honey Kurubas, said to be a darker and inferior race, employ themselves in collecting honey and bees' wax. The Irāḷiga seem to be another tribe closely resembling the latter. The Soligas are a very secluded race. They speak Old Canarese, and are remarkable for their keenness of sight, and skill in tracking wild animals. The tribe of Hasular, who somewhat resemble them, are met with along the Ghats on the north-western frontier.

The Korachar or Korava, a numerous wandering tribe, who carry salt and grain from one market to another by means of large droves of cattle and asses, and also employ themselves in making bamboo mats and baskets, appear to have an affinity with aboriginal or early naturalized tribes. The mode in which the men wear their hair, gathered up into a large knot or bunch on one side of the top of the head, exactly resembles what we see in the sculptured figures on various stone monuments. The women, again, may be known by numerous strings of small red and white glass beads and shells worn round the neck and falling over the bosom. In the depths of the forest they are even said to dispense with more substantial covering. This also accords with the ancient practice illustrated in numerous bas-reliefs. For women, as there represented, are commonly arrayed in nothing more than rows of ornamental chains and jewelry, pendent from the throat and loins—an attire, if such it may be called, worthy of the Age of Innocence ; and becoming enough, it may be, on the golden-olive and nut-brown tints, that scarce reveal a blush, of Nature's garb for the fair of these climes.

Descending to the interior, we find an out-caste race, the Holayar, whose name may be derived from *hola*, a field,* occupying a quarter of their own, called the *Hola-géri*, outside every village boundary-hedge. They are the *Chandāla* of Sanskrit writers ; and are the representatives of the *Bala-gai* or right hand faction, of which an account will be found further on. 'As a body they are the servants of the ryots, and are mainly engaged in tending the plough and watching the herds. But one of this despised order is generally the priest to the village goddess, and as such, on that annual day when all hasten to pay their offerings at her shrine, takes precedence of the twice-born Brahman.†

The *toḷi* or *kuḷarāḷi* (he who knows the ryots), always a Holaya, is a recognized and indispensable member of every village corporation.

* But the Brahmans call them Holeyar, which they derive from *hole*, impure.

† This and following particulars are taken from a paper by Captain Mackenzie on the *Kuḷarāḷi* of the *Hassan District*.—*Ind. Ant.* II, 65.

In his official position he is the village policeman, the beadle of the village community, the headman's henchman; but in the rights and privileges which yet cling to him we get glimpses of his former estate, and find proofs that the Holayar were the first to establish villages. All the castes unhesitatingly admit that the kuḷavāḍi is (*de jure*) the owner of the village. If there is a dispute as to the village boundaries, the kuḷavāḍi is the only one competent to take the oath as to how the boundary ought to run, and to this day a village boundary dispute is often decided by this one fact,—if the kuḷavāḍis agree, the other inhabitants of the village can say no more. Formerly, when a village was first established, a large stone, called *karu kallu*, was set up within it. To such stones the patel once a year makes an offering, but the kuḷavāḍi, after the ceremony is over, is entitled to carry off the rice, &c., offered and in cases where there is no patel, the kuḷavāḍi performs the ceremony.

But what seems to prove strongly that the Holaya was the first to take possession of the soil is, that the kuḷavāḍi receives and is entitled to receive from the friends of any person who dies in the village a certain burial fee, or as it is forcibly put 'they buy from him the ground for the dead.' This fee is still called in Canarese *nela hāga*.* In Manjarabad, the ancient Balam, the kuḷavāḍi does not receive this fee from those ryots who are related to the headman. Here the kuḷavāḍi occupies a higher position; he has in fact been adopted into the patel's family, for on a death occurring in such family the kuḷavāḍi goes into mourning by shaving his head. He always receives from the friends the cloths the deceased wore, and a brass basin.

The kuḷavāḍi however, has to pay an annual tax, consisting of one fowl, one haṇa (4 annas 8 pie), and a handful of rice, to the agent of the Sudugāḍu Sidda or lord of the burning grounds, who resides somewhere in the Baba Budan hills and is of the Gangadikāra Wakkaliga caste.

Traditions whose authenticity there seems no reason to doubt, are preserved, as elsewhere related, of an early Jain immigration, perhaps in the 4th century B. C., from Ujjayini and the north; also of the introduction in the 3rd or 4th century A. D. of Brahmans, the progenitors of the Haiga or Hāvika Brahmans of the Nagar country, from

*From *nela*, the ground, and *hāga*, a coin worth one anna two pie.

Ahichchhatra in Páñchála or Rohilkhand, by one of the Kadamba kings ;* of the attempt of the king of the Chandalas above the Ghats to form a matrimonial alliance with a Kadamba princess, his consequent death by treachery and the loss of his kingdom, into which the Brahmans under the new rulers gained admission. In the south we have evidence that in the 3rd and 4th centuries the Kongu or Chera kings were extending their sway over Mysore, and this seems to have been accompanied by a gradual setting aside of the predominant Jain influence by that of Brahmans. In the east and north-east, we may suppose that under the Pallavas, up to the 6th century, Buddhistic influences would be chiefly at work, and settlers from the Telugu countries attracted into Mysore. The progress of events as related in the last chapter will suggest the circumstances under which the population was probably recruited by Kongas, Reddis, Woddas and other tribes.

As far back as the 10th century we find two great territorial divisions, namely, Gangavádi, occupying the southern and central parts of the country, and Nonambavádi the northern. The correspondence of names makes it reasonable to suppose that in the Gangavádi and Nonaba Wakkaligas, who form, especially the first, so large a proportion of the agricultural class, we have the descendants of the subjects of those provinces. The advent of Muhammadan and Mahratta immigrants can without much difficulty be assigned to the right time, and that of Europeans is well known. The vicissitudes through which the country has passed will prepare us to find a great admixture of castes and people. Accordingly, no fewer than 413 different names of castes occur in the accounts which follow, taken from the Census Report by Major Lindsay.

Numbers and Castes.

The first census was taken in 1840—1 and the next in 1851—2, since which period annual returns were made up until 1871, when a census more minute and exact was carried out. The latter indeed may probably be considered the only real census obtained by actual enumeration of the people ; the older *Kháncshumári* estimates having been generally formed, it is believed, by multiplying the ascertained number

*The Haiga Brahmans seem to be of pure race and of no bastard or doubtful caste. They are described as very fair, with large eyes and aquiline noses, a description which would imply for them a derivation from an uncorrupted and little intermixed northern source.—CAMPBELL, *Ethnol. India*, 74.

of families by a figure assumed to be the average number of members composing each. Nevertheless the figures, so far as any are available, are not without interest.

Year.	Hindus.	Muhammadans.	Others.	Total.
1801	...	...	...	1,989,493
1804	2,094,359	77,395	...	2,171,754*
1832	...	...	...	3,500,000†
1841	...	...	...	3,050,713
1851	...	...	...	3,426,458
1852	...	...	...	3,460,896
1854	...	...	...	3,501,283
1855	...	...	...	3,535,441
1856	3,476,966	152,611	...	3,629,577
1857	3,417,944	161,160	...	3,609,104‡
1858	3,557,110	181,817	...	3,738,927
1859	3,621,723§	200,500§	...	3,822,223
1860	...	...	...	3,821,000
1863	...	...	...	3,872,209
1864	...	...	...	3,895,687
1865	...	...	...	4,013,631
1866	...	...	...	3,915,721
1867	3,724,178	172,255	14,302	3,910,735 } Famine
1868	...	...	...	3,909,121 } years.
1869	3,793,873	182,654	29,713	4,006,340
1870	3,839,679	189,272	27,815	4,108,607

The results of the regular census of 1871 shew that the population must have been under-estimated in the previous valuations.¶ But so far as these afford any data for calculation, the rate of increase in the decade 1841—1851 was 12·3 per cent; in the 9 years 1851—1860 the rate was 11·5 per cent; and in the decade 1860—1870 it was 7·5 per cent.

The following table shews the total male and female population in each District compared with the numbers of the previous estimate :—

*Excluding Balam and the recently inter-changed districts, the number was 202,261. A considerable migration took place from the districts allotted to the Nizam into Deoballpur and that neighbourhood, but nearly the whole of these persons gradually returned after the cession of those provinces to the Company. Many families which had emigrated to Baramahal in 1792 when it was ceded to the Company, now returned to Mysore. About 200,000 persons also emigrated temporarily from the Mahratta country into Mysore, to escape from the famine which prevailed there.

†This is printed in the report as 4,500,000, a total which seems so manifestly wrong that I have taken the liberty of altering the first figure.

‡The decrease is explained as due to the omission of the island of Seringapatam. § Approximate.

¶Writing in 1804, Col. Wilks has the following remarks on the estimate of population at that period :—“ I am induced to suspect some error in one of the computations, notwithstanding the frequency in Mysore of that most fatal source of depopulation, the presence of a Mahratta army. The usurpation of Haider Ali may be considered as complete in 1760: at that time many of the districts were permanently occupied by Mahratta troops. Gopal Rao Hari invaded Mysore in the same year. It was again invaded by Bani Visaji Pandit in 1761; by Madhu Rao in 1765 1767 and 1770; by Tryambak Rao in 1771; by Raghunatha Rao in 1774; by Hari Pant Purbia in 1778 and 1786: and lastly I have investigated on the spot and examined the traces of the merciless ravages committed in 1791 and 1792 by Parasuram Bhao. In consequence of these incessant calamities, many districts formerly well peopled do not exhibit the vestige of a human being; and Chitaldroog District in particular may be considered as deprived of the great mass of its inhabitants.”

The word *valse* is applied to the inhabitants of a district who, deserting their homes on the approach of a hostile predatory force such as that of the Mahrattas, migrate *en masse* to another part of the country or to inaccessible woods and hills until the departure of the enemy. And no testimony could be more emphatic to a state of habitual misery than the existence, in all the languages of the south, of this single term to describe what cannot be expressed in any European language but by a long circumlocution.

District.	Estimated Population of 1869—70.			Actual Number as per General Census of 1871.			Increase per cent.
	Males.	Females.	Total.	Males.	Females.	Total.	
Bangalore ...	356,241	303,162	659,403	414,543	413,811	828,354	25.6
Kolar ...	274,859	251,601	526,460	309,685	309,239	618,924	17.6
Támkúr ...	251,029	245,034	496,063	315,440	316,799	632,239	27.5
Mysore ...	400,547	362,922	763,469	467,562	475,625	943,187	30.7
Hassan ...	320,573	272,428	592,001	328,324	340,093	668,417	12.8
Shimoga ...	234,167	198,653	430,220	258,446	240,530	498,976	16.0
Kadur ...	147,593	124,229	261,822	170,337	163,588	333,925	27.6
Chitaldroog ...	203,969	175,310	378,379	271,587	239,773	511,360	40.4
Total.....	2,177,868	1,930,739	4,108,607	2,535,924	2,519,488	5,055,412	23.0

The total population, as ascertained by the general census of November 1871, thus amounts to 5,055,412, giving 186.7 to the square mile. The number of males is 2,535,924, of females 2,519,488. The distribution is as under:—

District.	Males.	Females.	Total.	Average number of persons to the square mile.	Proportion per cent of the population in the several Districts.
Bangalore...	414,543	413,811	828,354	284.3	16.4
Kolar ...	309,685	309,239	618,924	240.2	12.2
Támkúr ...	315,440	316,799	632,239	175.3	12.5
Mysore ...	467,562	475,625	943,187	228.5	18.7
Hassan ...	328,324	340,093	668,417	203.1	13.2
Shimoga ...	258,446	240,530	498,976	131.4	9.9
Kadur ...	169,564	163,588	333,152	145.6	6.6
Chitaldroog ...	271,587	239,773	511,360	118.8	10.5
Total.....	2,535,924	2,519,488	5,055,412	...	...

Classing the people according to creed, we obtain the following results:—

Class.	Males.	Females.	Total.	Percentage.
Hindus ...	2,407,642	2,399,783	4,807,425	95.09
Jains or Bud dhists ...	6,943	6,320	13,263	.26
Muhammadians ...	107,785	101,206	208,991	4.13
Christians ...	13,526	12,150	25,676	.50
Others ...	28	29	57	...
Total.....	2,535,924	2,519,488	5,055,412	...

Hindus.—Under the term Hindu have been included all natives of this part of India who do not properly come under one of the other headings. They may be further classified as followers of Siva 2,564,846, followers of Vishnu 2,242,532, and others 47.

The Hindus are nominally divided into four castes, which are entirely separate from each other, and between whom no connection by marri-

age or otherwise is permitted. The distinction is complete in every sense, hereditary and personal, and it is impossible for any member of these castes to be other than what his birth made him, unless indeed he should transgress some law binding on his particular caste beyond the possibility of pardon or expiation. In such a case the punishment is expulsion from the community or loss of caste, when the unfortunate individual becomes contemptible in the eyes of all, and his place henceforth is amongst the lowest Pariahs, the dregs of Hindu society. Even the most despised caste would decline to admit him on terms of social equality, even though he had been originally one of the heaven-born Brahmins. The first or highest caste is the Brahman or priestly class ; the second the Kshatriya or military class ; the third is the Vaisya class, composed of husbandmen and merchants ; and the fourth is that of the Súdras, and comprehends artisans, labourers and agriculturists. Besides these there are many castes unrecognized by the four grand divisions, whose manners and customs are governed by laws of their own, and who are as exclusive in their way as any of the four above mentioned.

Caste, originally called *varṇa*, colour, but now more usually *jāti*, birth, was doubtless at first a distinction of race based on difference of complexion, and intended to prevent degeneration from intermixture of the fair-skinned Aryan conquerors with the dark-skinned earlier settlers or the black aboriginal tribes.* The tradition of the common origin of the four pure castes or tribes from the head, arms, thighs, and feet of Brahma, points to them collectively as forming eventually one nation, each class distinguished from the others by reason of its occupation, which was probably hereditary. But numerous other mixed castes were always found among the great body of the population. It is probable that in ancient times the vanquished nations in a manner adopted some of the peculiarities of their conquerors and formed themselves into small clans or tribes who held aloof from their neighbours and gained, so to speak, some distinction by their exclusiveness. In course of time, others, to obtain a like advantage, would follow the example, until at length the whole population is found divided into numberless communities to all of which the term caste has been applied.

In Mysore the various castes are probably as numerous as in any other part of India of equal extent. The natives of the Province, by a fanciful arrangement, recognize 101 as the limit to the total number, but in the

*According to a passage in the Maha Bharata, the colour of Brahmins is white, of Kshatriyas red, of Vaisyas yellow or turmeric, of Sudras black.

enumerators' forms of the recent census, it is found that 413 castes have been returned. Some of these, though returned in different localities under different names, doubtless belonged originally to the same stock. A few families or individuals probably separated from the main body, and having removed to another part of the country either adopted a new name or were given one by their neighbours.

There is every reason to believe that in some similar manner the number of castes is even now constantly increasing. Disputes arise, and the caste divides into two factions, each headed by some influential man or family; they refuse to associate with each other or to intermarry, and unless in a short time some common interest compels the parties to re-unite, a separate caste or sub-division is permanently formed, which adopts some peculiarity of its own to distinguish it from the original.

The agricultural, artisan and trading communities are termed *paṇas* or professions, which are eighteen in number. These *paṇas* are divided into two factions, called Bala-gai and Yeḍa-gai, or right and left hands. A large number of castes belong to one or other of these divisions. All Brahmans, Kshatriyas, and most of the Sudras are considered neutral. Although the right and left hand factions are said to include only 18 trades, there are many castes which adhere to one side or the other, but their numbers do not seem to be taken into account.

The following are the castes composing the two factions :—

<i>Right-hand Faction.</i>		<i>Left-hand Faction.</i>	
Banajiga	... Traders.	Pāncālā, comprising—	
Wakkaliga	... Cultivators.	Budga	... Carpenters.
Gāṇiga	... Oilmen who yoke only one bullock to the mill.	Kanchugāra	... Copper or brass smiths.
Baṅgāre	... Dyers.	Lohāra	... Iron smiths.
Lāḍa	... Mahatta traders.	Wajḍar	... Stone masons, and
Gujarāṭi	... Gujarāt merchants.	Akāsāla	... Goldsmiths
Kāmāṭi	... Labourers.	Bhūri	... A class of Nagarta traders.
Jaina or Buddhists.		Dévānga	... Weavers.
Kuruba	... Shepherds.	Haggāṇiga	... Oilmen who yoke two bullocks to the mill.
Kumbāra	... Potters.	Golla or Dlanajāla	... Cowherds.
Agasa	... Washermen.	Feda	... Hunters.
Besta,	... Fishermen or Polanquin bearers.	Yākula	... Cultivator.
Padmasāle	... A class of Weavers.	Palli or Tigala.	
Nāṇḍa	... Barbers.	Mādiga, the lowest left-hand caste.	
Uppāra	... Salt-makers.		
Chitragāra	... Painters.		
Golla	... Cowherds.		
Holaya, the lowest right-hand caste.			

The Banajigas and Linga Banajigas are the foremen of the right hand faction. They say that all the 18 *paṇas* or professions enumerated above belong to them, and that the 9 *paṇas* of the left-hand are

separate. The Páñchálas and Nagartas, who are at the head of the left-hand faction, contend that the 18 *panas* are equally divided between the two factions, and that the nine above enumerated belong to them.

The origin of the distinction between the two divisions is founded on fable,* and is said to have taken place at Conjeveram, where the goddess Káli placed certain castes on her right hand and others on her left. The two parties have ever since disputed as to the relative honour accorded to each side. The division appears to be of comparatively modern origin as it is not mentioned in any ancient work. It is moreover confined entirely to the south of India. Each party insists on its exclusive rights to certain privileges on all public festivals and ceremonies, and it not unfrequently happens that one side usurps the supposed and jealously guarded rights of the other. On such occasions a faction fight is almost sure to ensue. Cases are recorded where the carrying of an umbrella, or wearing particular coloured flowers in the turban, has given rise to severe outbreaks accompanied by bloodshed. The opposition between the two divisions is still kept up, but apparently not with the same bitterness as in former times.

The right-hand claim the exclusive privilege of having twelve pillars in the *pandal* or shed under which their marriage ceremonies are performed (allowing to the left only eleven); of riding on horse back in processions, and of carrying a flag painted with the figure of Hanumán.

The two factions are also styled Dēsa and Pēṭe (in some places Náḍu). The reason given is that Lingayat Banajigas, who are at the head of the right hand division, not being original natives of the place, were called Désavalas or outsiders, and the others Pēṭe or Náḍuvalas.

The strength of the respective orders of Hindus is returned as under :—

Class.				Males.	Females.	Total.	Per centage.
Brahmans ...	...	...	...	85,913	83,724	169,637	3.51
Kshatriyas ...	...	...	...	33,996	33,362	67,358	1.39
Vaiśyas ...	...	...	...	20,331	18,678	39,009	.80
Sūdras ...	...	...	...	1,510,340	1,511,269	3,021,609	62.67
Jains ...	...	...	...	6,943	6,310	13,253	.27
Wandering tribes.	...	...	...	37,073	35,411	72,484	1.56
Wild tribes...	...	...	...	8,648	7,917	16,565	.34
Other castes	...	...	...	711,340	709,419	1,420,759	29.47
Coorgs ...	...	...	...	12	6	18	...
Total.....				2,414,596	2,406,106	4,820,702	...

*There is also a right and left hand division of Sakti worshippers, the rites of the former being principally magical, of the latter bloody and licentious. But there seems to be no connection between the cases.

Brahmans.—The Brahmans with a few exceptions belong to the Pancha Drāviḍa or five southern tribes, as distinguished from the Pancha Gauḍa or five tribes of India north of the Krishna.* The Pancha Drāviḍa, named from the language of the original seat of each tribe, are the :—

Karnātaka	whose house language is	Kannāḍa.
Andhra or Teluṅga	" "	Telugu.
Maharāshtra	" "	Mahrattī.
Gujara	" "	Gujarattī.
Drāviḍa	" "	Tamil.

These seldom intermarry, and though they have been long intermixed, they generally retain in their families the language of the country from whence they originally came. Each of the five sub-divisions consists of a number of families or *gotrams*, and a man and woman of the same *gotram* never marry together. The connection of the *gotram* is entirely in the male line. Representatives of each of these five sub-divisions are to be found in the Province, but Karnātaka and Andhra Brahmans are the most numerous.

The Brahmans are divided into three sects, Smārta, Mādхва and Srivaishnava, whose number and distribution are as follows :—

District.	Smārta.	Madhva.	Srivaishnava.	Total.
Bangalore ...	18,027	7,627	2,988	28,642
Kolar ...	15,242	7,213	2,473	24,928
Tūmkūr ...	11,512	3,843	1,356	16,711
Mysore ...	18,023	6,162	4,630	28,815
Hasan ...	12,195	1,722	5,150	19,067
Shimoga ...	20,435	5,671	463	26,569
Kadur ...	15,952	1,001	654	16,707
Chitaldroog ...	4,337	3,386	475	8,198
	114,823	36,625	18,189	169,637

All three sects are composed of either Vaidikas or Laukikas, the former, those who have devoted themselves entirely to religion; the latter, those who attend to worldly affairs. The distinction is merely an individual one, as different members of the same family may be either Vaidikas or Laukikas according to inclination.

The occupations of the Brahmans are thus returned :—

Occupation.	Smārta.	Madhva.	Srivaishnava.
Government service ... per cent	6.9	10.3	5.9
Religious " ... "	9.8	9.4	14.8
Agriculture ... "	9.8	3.8	5.2
Other occupations ... "	2.7	3.5	2.3
Without occupation, including women and children ... "	70.8	73.	71.8

*The Pancha Gauḍa are Kānyakubja or Kanōjiya, Sārāsvata, Gauḍa, Maithila and Utkala.

Smártas.—The Smártas are distinguished from other Brahmins by three horizontal marks of pounded sandal-wood on their foreheads and a round red spot in the centre. They worship the triad of Brahma, Siva and Vishnu under the mystical syllable *om*, and while admitting them to be co-equal, exalt Siva as their chief deity. They are also called Advaitas, as they believe God and matter to be identical, and that everything is but an atom of the divinity, they themselves being parts of the Supreme Being. The founder of this sect was Sankaráchári, and their guru is the Sringeri swámi.

Mádhvas.—The Mádhvas are Vaishnavas and are distinguished by a single black perpendicular line from the junction of the eyebrows to the top of the forehead with a dot in the centre. They have also stamps bearing certain forms and devices emblematic of Vishnu, which they dip in pounded sandal-wood or yellow ochre and impress the mark on their head, neck, breasts and arms. Mádhvas are also called Dwaitas, as they consider the Creator and the created distinct, and their final absorption to be in the future. They worship both Vishnu and Siva, but more particularly the former. The founder of the sect was Madhváchári.

A Smárta may become a Mádhva and *vice versa* ; but the former happens oftener than the latter. In such cases, intermarriages between persons of the same circle are not prohibited though they embrace different doctrines, but the wife always adopts the tenets of her husband.

The following 39 sub-divisions or clans, alphabetically arranged, are found among Smárta and Mádhva Brahmins, of the principal of which a description is subjoined :—

Aravattu wokkalu, A'avelu, A'ravelu Niyogi, Babbur Kamme, Baḍaganáḍu, Chittapávana, Deshastha, Dráviḍa, Hávika or Haiga, Hoisala or Hoisenige, Kambaluru or Toṭada Tigala, Kandávára, Kannaḍa Kamme, Karáḍi, Késalanáḍu, Kavarga, Kótu, Koṭisvara, Kusastala, Murikináṭi or Mula-kanadu, Nandavaidika, Pátale, Pericharana or Brihachcharana; Prathamásákhe, Suklayajussákhe, Kánva, Mádyanjana or Yájnyavalkya; Sahavási, Sankéti, Sáravata, Sénivéru, Síránáḍu, Sisuvarga, Sivalli, Sivanambi or Sivaráḍhya, Telaghánya, Ucha Kamme, Uttaráṭi Kannaḍiga, Vadama, Vangipuram, Vaganáḍu, Velanáḍu.

Hoisala or Hosenige.—Chiefly Smártas ; met with all over the Province ; language Kannaḍa. Some wear the distinguishing marks of Mádhvas and Sri-vaishnavas, but their guru is the Sringeri Swami.

Baḍaga-náḍu.—Both Smártas and Mádhvas ; most numerous in the Nundydroog Division and Chitaldroog District ; language Kannaḍa.

Kannaḍa kamme.—Smártas and Mádhvas ; mostly in Nundydroog Division ; language principally Kannaḍa, some speaking Telugu also.

Uleha kamme.—Smártas and Mádhyas, chiefly in Nundydroog and Ashtagram Divisions; language Kannada.

Babburu kamme.—Smártas only; found all over the Province, most numerous in Ashtagram and Nagar Divisions; language Kannada.

A'ravélu.—Smártas and Mádhyas; scattered all over the Province; language Kannada and Telugu.

Aravattu wokkalu.—Said to have belonged to the Aravelu, of whom 60 families were selected as disciples by the guru of Vyásaráya math during the time of the Anegundi princes, hence the name *aravattu*, 60; nearly three-fourths of them are Mádhyas; language Kannada.

A'ravélu Niyógi.—Smártas, Mádhyas and Srivaishnavas; natives of the Telugu Districts of the Madras Presidency; not numerous in Mysore; language Kannada.

Uttaráji Kannadiga.—Also an off shoot of the Aravelu sub-division. Before the establishment of the Anegundi dynasty, Sripáda Ráya of Venkatagiri made them his disciples, his math being a branch of that of Uttaráji, hence the name. Very few in the Province, chiefly in Nundydroog and Ashtagram Divisions; principally Mádhyas; language Kannada.

Kambaluru or Toṭada Tigala.—Also a branch of the Aravelu, very few in number.

Sira-nádu.—Has two sub-divisions viz. Hale Siranádu and Hosa Siranádu—the former Smártas and the latter chiefly Mádhyas; language Kannada.

Muriki-náti or Mulaka-nádu.—Smártas; scattered all over the Province; language Telugu.

Velanú.—Same as above.

Kásala-nádu.—Smártas, principally met with in Bangalore and Tunkúr Districts; language Telugu.

Véga-nádu.—Smártas; language Kannada.

Telaghánya.—All Smártas from the Telugu country, speaking that language.

Pericharna or Brihachcharana, Vadama, Drávida.—All Smártas; found mostly in Bangalore and Kolar Districts, most of them immigrants from the Tamil country, some of their customs being similar to those of the Srivaishnavas. A few of the Drávidas from the Telugu districts speak that language.

Deshasta.—Both Smártas and Mádhyas, language chiefly Mahratta.

Sivanambi or Saivárúthya.—All Smártas; priests to the gods in Sivite temples; have debased themselves by performing menial offices to the deities for wages. The other Smártas and Mádhyas will not eat with them. Language Kannada.

Nandaváidika.—Immigrants from the Telugu country; thinly scattered in Nundydroog and Ashtagram Divisions; language Telugu and Kannada; are worshippers of both Vishnu and Siva.

Vangipuram.—Purely Smártas. During the early part of the late Raja's administration they followed Faujdar Nallappa to Túngkúr, where they have settled. Language Telugu.

Prathama sákhe, Sukla Yajus sákhe, &c.—Both Smártas and Madhvas; a few following Srivaishnava religion; language Telugu and Kannada.

Sankéti.—Are a Smárta colony from Madura District in the Madras Presidency; speak a corrupt Tamil; chiefly located in Ashtagram Division, very few being found in other parts. The greater portion of them are Vaidikas. The women tie their cloth in a manner peculiar to themselves, that is, tight round the body instead of loose and flowing. The custom has its origin in fable, and is supposed to be in accordance with the wish and warning of the prophetess Nácháramma or Nangiramma*. There are two sub-divisions of this clan, namely Kausika and Bettádpur Sanketis. They eat together, but will not intermarry.

Sisuvarga, Kóta, Kandávára, Kavarga, Sivalli, Kótisvara, Kusastala, Hávika or Haiga.—Immigrants from South Canara, called Tulu Brahmans; both Smártas and Mádhvas; found chiefly in Shimoga and Kadur Districts, engage in agriculture and trade; language Tulu and Kannada.

Chittapávana, Sahavási, Pátale, Sénivéru, Karádi, Sárasvata.—Are from Northern Hindustan and belong to the Pancha Gauḍa division of Brahmans; found in Shimoga and Kadur Districts in small numbers; both Smártas and Mádhvas. No social intercourse held with them by the Pancha Dravida division, to which the Brahmans of the Mysore Province belong.

Srivaishnavas.—The Srivaishnava sect of Brahmans are worshippers of Vishnu as identified with his consort Lakshmi or Sri. Their distinguishing mark is in the shape of a trident, being three vertical lines on the forehead meeting at the junction of the eyebrows, the two outside lines being white and the centre one yellow. There are two sub-divisions of this sect, called Waḍagale or northern, and Tengale or southern, between whom there are constant quarrels. The schism arose about 500 years ago in consequence of difference of opinion regarding the interpretation of some texts in the Védas. Notwithstanding the absence of cordiality between the two sub-divisions, they eat together and also intermarry. The Tengales, as a distinguishing mark, place a

* Her story was related to me as follows:—She was the wife of a Brahman and they had one son; but they were so poor that they resolved to drink *ijyotishmati taila* (in Kannada *gangonde yenne*) which would have the property to kill one, madden another and make the third wise, hoping the latter effect would be produced on the boy. But the boy it was who died, the man went mad, and the woman became wise. The Brahmans, incensed by her success in controversy, assembled a council and in some way insulted her. She therefore cursed them to become Chandálas if found in that place in 3½ *ghalige*, whereupon they all fled in terror. Nangiramma is stated to be an object of worship in the sect.

sort of pedestal to the trident mark, which extends for about an inch down the nose. The founder of the sect was Rámanujachari. Both subdivisions pay reverence to Ahobala-swami and Vanamamale Jiyar in Tinnivelly. In Mysore their guru is Parakálaswami of Melukote.

The Srivaishnava Brahmans are divided into three main branches, called Mai-nád (up country), Moras-nad (middle country), and Kil-nad (low country), which are again sub-divided into numerous clans, the principal of which, in alphabetical order, are the following 15 ;—

Bhattráchár. Chólí and Munchólí, *Hebbár.* Hemmigeýár, Kallukunteýár, Mandettár, *Marudurár.* Metukunteýár, Nalláñchakravarti, Páñclarátrál, Prativáðibhayankarattár *Sómeshándal.* Tirumaleýar, Vaikhánasál, Yemlar.

Hebbár.—Descendants of immigrants from Srirangam, Conjeveram and other parts of Southern India, who settled in five different parts of the Province and formed themselves into five groups, called Pancha-gráma, each being composed of five villages. These Panchagrama are Kadaba (Támkúr District), Gráma (Hassan District), Patna (Seringapatam), Molur (Bangalore District), and Belúr (Hassan District.) Members of these five groups eat together and intermarry; are both Tengale and Wadagale; language Tamil.

Mandettár.—Immigrants from a village called Mandyam near Tirupati, who settled in Melukote and Mandya, which latter place they named after their native village; are to be met with mostly in Ashtagram Division; language Tamil; are purely Tengale.

Hemmigeýár.—All Vaidikas of the Wadagale sub-division, and located at Hemmige in the Mysore District, which is said to have been given in inám to one of their ancestors by the then ruling sovereign as a reward for distinguishing himself in a literary discussion. Language Tamil.

Metukunteýár.—Are Wadagale and disciples of Parakálaswami found all over the Province; language Telugu and Tamil.

Marudurár.—Are of the Wadagale sub-division; about forty families in the Province; language Tamil.

Sómeshándal or Somási Andiyán.—Are Wadagale immigrants from Srirangam, chiefly Vaidikas, and prevail mostly in the Ashtagram Division. Language Tamil.

Kallukunteýár.—Nearly all live in the Júdi village of Kallukunte in Hoskote taluk of the Bangalore District. All Wadagales and Vaidikas; language Tamil.

Prativáðibhayankarattár.—Are Tengale, and chiefly Vaidikas; immigrants from Srirangam and located principally in Kolar District; language Tamil.

Nalláñchakravarti.—Wadagale immigrants from Conjeveram, and found scattered over the Province; all Vaidikas; language Tamil.

Yembdr.—Are Tengales from Srirangam and speak Tamil.

Bhattaráchár.—Chiefly located in the Kolar District; are Tengales and generally Vaidikas; language Telugu and Tamil.

Tirumaleyár.—Descendants of Kóti-kanyá-dána Tátáchar, who came from Conjeveram; all Wadagales and Vaidikas; found throughout the Province, and speak Tamil.

Vaikhánasál.—Are Wadagales from Tirupati, and entirely engaged as *archikas* or priests in Vishnuvite temples; they occupy the same position among the Srivaishnava sect as Sivanambis do among Smártas. The rest of the sects hold no social intercourse with them. Language Telugu.

Puncharátról.—Also priests in Vishnuvite temples; are both Wadagale and Tengage; language Telugu and Tamil.

Chóli and Munchóli.—So called because they retain the lock of hair in front of the head; found in the Nundydroog and Ashtagram Divisions: are Tengage, and speak Tamil.

Kshatriyas.—The races inhabiting Mysore included in the Kshatriya order are the following:—A're or Mahratta, Rajpinde, Ráchévár, Rajput and Sikh.

The strength and distribution of each is as under:—

District.	A're or Mahratta.	Rajpinde.	Ráchévár.	Rajput.	Sikh.	Total.
Bangalore ...	9,241	253	2,345	2,045	3	13,887
Kolar ...	4,141	...	991	1,301	...	6,433
Támkúr ...	3,152	12	1,444	925	...	5,533
Mysore ...	6,724	3,714	2,708	2,042	...	15,188
Hasan ...	1,814	269	1,455	559	18	4,115
Shimoga ...	11,558	214	1,593	1,355	...	14,720
Kadur ...	2,674	14	1,243	226	...	4,157
Chitaldroog ...	2,474	3	455	369	24	3,325
Total.....	41,778	4,479	12,234	8,822	45	67,358

The following are the clans or sub-divisions of the respective races.

Mahratta.—Bhaniya, Baruva, Kine, Kshatribhánu, Lankekára, Manga, Rávuṭa, Bhussa Mahratta, Kumari Mahratta.

Rajpinde.—Arasu, Komarapatta.

Ráchévár.—Teluga arasu, Jatti, Ranagára, Malláru, Chitragára or Bannagára, Méli, Sarige.

Rajput.—Tamboli, Káyasta.

The *Mahrattas*, or *A'res* as they are called in this Province, are doubtless descendants of those who settled in the country after the Bijapur conquests of the north and east, under the government of Shahji and his successors. They are principally Sivites, but worship many of the Hindu deities. They also pay special homage to their arms. It is a custom, however, with all castes of Hindus from the highest to the lowest

to reverence in some shape or other the implements or instruments appertaining to their profession. Their principal occupation is agriculture, labour and government service.

Rajpinde.—This caste, as the name implies, are relatives of, or connected with, the Rajas of Mysore. They are also called Arasua. During the life time of the late Maharaja, they were divided into two factions, in consequence of the refusal of 13 families, headed by the Dalavayi (the chief of the female branch), to pay respect to an illegitimate son of His Highness. The other 18 families consented to the Raja's wishes, and treat the illegitimate branch, termed Komarapatta, as equals. The two divisions intermarry and eat together, and the family quarrel, though serious at the time, is not likely to be permanent. They are chiefly employed under Government and in agriculture, most of the former being engaged in the palace at Mysore. Rajpindes are both Vishnuvites and Sivites, and their priests are both Brahmans and Lingáyat Waders.

The *Ráchevár* or *Rújavár* also claim a royal connection. In some parts of the Province they are called Baḍa-arasu Makkalu, poor king's children. About two-thirds of the whole number are Vishnuvites, and have Srivaishnavas as priests. The *Juttis* or *Jeṭtis* are professional athletes. In Nagar they are called Mustigas. They were sometimes employed as executioners and despatched their victim by a twist of the neck. They are still considered skilful in setting dislocated joints. Colonel Wilks has the following note regarding them half a century ago.

Mysore, I believe, is the only country in the south of India in which the institution of the athletæ (Jeti) has been preserved on its ancient footing. These persons constitute a distinct caste, trained from their infancy in daily exercises for the express purpose of exhibitions; and perhaps the whole world does not produce more perfect forms than those which are exhibited at these interesting but cruel sports. The combatants, clad in a single garment of light orange-coloured drawers extending half-way down the thigh, have their right hand furnished with a weapon, which, for want of a more appropriate term, we shall name a cæstus, although different from the Roman instrument of that name. It is composed of buffalo horn, fitted to the hand, and pointed with four knobs, resembling very sharp knuckles, and corresponding to their situation, with a fifth of greater prominence at the end nearest the little finger, and at right angles with the other four. This instrument, properly placed, would enable a man of ordinary strength to cleave open the head of his

adversary at a blow : but the fingers being introduced through the weapon, it is fastened across them at an equal distance between the first and second lower joints, in a situation, it will be observed, which does not admit of attempting a severe blow, without the risk of dislocating the first joints of all the fingers.

Thus armed, and adorned with garlands of flowers, the successive pairs of combatants, previously matched by the masters of the feast, are led into the arena; their names and abodes are proclaimed; and after making their prostrations, first to the Raja seated on his ivory throne in a balcony which overlooks the arena, and then to the lattices behind which the ladies of the court are seated, they proceed to the combat, first divesting themselves of the garlands, and strewing the flowers gracefully over the arena.

The combat is a mixture of wrestling and boxing, if the latter may be so named: the head is the exclusive object permitted to be struck. The guards for defence, though skilful, are not numerous: the blows are mere cuts inflicted by the *cæstus*; and before the end of the contest, both of the combatants may frequently be observed streaming with blood from the crown of the head down to the sand of the arena. The wrestling is truly admirable; and the exertions of the combatants to disengage themselves from unfavourable positions, in which the head would be exposed to the *cæstus*, are, as mere specimens of activity, not exceeded by any corresponding exhibition on a European stage.

When victory seems to have declared itself, or the contest is too severely maintained, the moderators in attendance on the Raja in the balcony make a signal for its cessation, by throwing down turbans and robes, to be presented to the combatants, who before retiring repeat their prostrations to the Raja and the lattices. A wistful look towards the balcony is the usual symptom of acknowledged inferiority, or of being, in the phrase of English pugilists, not game, and the victor frequently goes off the arena in four or five somersaults, to denote that he retires fresh from the contest. A pair of fresh combatants is introduced with the same forms, and of such pairs about two hundred are exhibited during the nine days of the great Dasara festival.

The Jetti of Mysore are divided into five classes, and the ordinary prize of victory is promotion to a higher class. There are distinct rewards for those of the first class, and in their old age they are promoted to be masters of the feast.

The *Malla* are also boxers and wrestlers. This was a title assumed by many of the kings, as will be seen from the historical lists.* The *Chitrágára* or *Bannágára* are painters and decorators. They make trunks and palanquins, paint pictures of the Hindu deities, &c., and are also gilders and book binders. In Chitaldroog District they are called Ginigára. A portion of the Chitrágára are Vishnuvites and the rest Sivites, each of whom have their own priests, but the difference in reli-

* In a somewhat similar sense must have been used the *Scotus Malleus* on the tomb of Edward in Westminster Abbey.

gion does not prevent intermarriage or social intercourse. Chitragára never cultivate the ground nor act as merchants. The *Sarigevála* consist of about 50 families resident in the town of Bangalore, who make a superior kind of gold and silver lace.

Rájputs, literally *Rája-putra*, also claim to be of royal descent. They are most likely immigrants from Northern India subsequent to the rise of the Mahratta power. Their principal occupations are Government service, agriculture and labour.

Sikhs. There are not many of this caste. They are chiefly employed in the Mysore Horse, and a few are agriculturists.

Vaisyas.—The sections composing the trading class are—Gujarátí, Márvádí and Agravala, Multáni, Kómatí, Nagarta or Bhéri, and Ládar.

Their numbers and distribution are as under :—

District.	Gujarátí.	Márvádí.	Multáni.	Kómatí.	Nagarta.	Ládar.	Total.
Bangalore	19	40	23	5,642	4,888	153	10,765
Kolar	...	...	...	8,131	3,325	30	11,486
Tumkúr	...	18	...	4,077	66	190	4,351
Mysore	105	10	2	2,227	98	736	3,168
Hassan	...	4	...	1,649	15	64	1,731
Shimoga	3	62	1	1,057	18	14	1,155
Kadur	27	4	...	1,157	253	281	1,722
Chitaldroog	...	42	...	4,406	28	155	4,631
Total	154	180	26	28,345	8,681	1,623	39,009

The first three classes are not permanently settled in the country. The *Gujarátis* are small money lenders and trade in jewels, cloths and other articles. They are mostly Vishnuvites, and recognize Brahmans as their priests. The *Márvádis* are tradesmen from Marwar, who deal in pearls, cloths, &c. More than a half are Buddhists, and of the remainder Sivites are more numerous than Vishnuvites. The *Multánis* similarly come from Multan for trade.

The *Kómatís* are the predominant sect of Vaisyas, and lay exclusive claim to rank in that order. They are sub-divided into Yavamanta, Tuprada Kómatí, Kannada Komati and Myáda, all of whom eat together and intermarry. They include worshippers of both Vishnu and Siva, but chiefly pay homage to the goddess Kánnika Paramésvari, the consort of Siva. Marriage of cousins is the established rule among the *Kómatís*, a girl being generally married to her maternal uncle's son. The results of this custom are probably worthy the attention of physiologists.*

* In what proportion this class is represented among the blind, deaf, lame, lepers and insane is not known; but the census returns shew that the Kolar District has the largest number of persons so afflicted in proportion to its population, and Kadur the least. Now the Komatis are also most numerous in the former and least so in the latter, the difference being as 7 to 1.

There is a marked preponderance of males over females, and personal charms are scantily bestowed.

Nagartas.—These are divided into two sects, called *Námadhári* and *Siváchár*. The entire class call themselves *Vaisyas*, but this is disallowed by both *Brahmans* and *Kómatís*. Some are farmers, but they never till the ground with their own hands, nor do they follow any mechanical profession. The *Námadhári* worship *Vishnu*. The *Siváchár* *Nagartas* are *Sivites* and have their own hereditary chiefs distinct from those of the *Námadháris*. The two sects do not eat together or intermarry. Cases sometimes occur of a *Siváchár* marrying a *Námadhári* woman, and when this happens her tongue is burned with a hot iron and she is invested with the *linga*, after which she forsakes her parents' house and religion. It is stated that the *Sivachar* *Nagartas* never give their daughters in marriage to the *Námadhári* sect. There is another sub-sect of the *Siváchárs* in the *Bangalore* District who do not wear the *linga*. They are called *Bhéri* and decline social intercourse or intermarriage with either the *Námadhári* or *Siváchár*.

Ládars.—The *Ládars* are tradesmen from the *Mahratta* country. They claim to be *Kshatriyas*, but this rank is not usually accorded to them. They wear the sacred thread, and their families are divided into *gotrams* like those of *Brahmans*. They pay special homage to the consort of *Siva* under the name of *Bhaváni*. Their priests are *Sanyásís*.

Sudras.—The names, numbers and distribution of the *Sudra* classes of the community are as under:—

District.	Bangalore	Kolar.	Támkár.	Mysore.	Hassan.	Shimoga.	Kadur.	Chital-droog.	Total.
Agasa ...	12,478	10,705	11,223	15,544	11,894	11,565	4,771	8,788	86,971
Besta ...	8,559	4,942	4,958	80,782	11,817	11,745	5,145	6,269	134,247
Bedar ...	22,403	56,772	48,087	2,274	5,905	21,372	7,238	98,050	262,101
Banajiga ...	23,826	38,157	16,180	14,735	6,629	4,962	6,622	4,984	122,035
Darji ...	3,099	360	585	1,430	499	2,117	669	837	9,566
Gániga ...	5,790	5,837	3,572	12,238	4,187	719	787	1,962	35,092
Góniga ...	870	291	635	17	...	94	20	...	1,837
Golla ...	23,575	22,583	49,416	4,126	5,223	3,275	4,821	46,296	160,015
Gulikára ...	...	...	...	...	9	79	2	...	80
Idiga ...	2,863	1,933	5,759	7,360	5,254	49,987	2,462	5,097	80,715
Kumbhára ...	4,840	3,511	3,137	16,175	4,992	2,865	2,912	2,193	34,565
Kuruba ...	46,167	35,963	42,757	98,217	55,341	25,634	31,699	35,439	371,317
Modali ...	6,774	295	285	968	221	127	121	...	8,985
Muchi ...	162	15	91	587	65	524	149	335	1,328
Náyinda ...	8,757	9,325	4,658	6,303	4,748	2,266	1,784	2,101	39,652
Neyige ...	25,419	8,937	8,517	6,764	15,972	7,210	11,624	11,040	95,513
Natva ...	991	1,016	130	1,070	231	195	56	84	3,733
Sádar ...	3,822	3,329	9,987	146	2,598	44,881	19,737	34,983	119,483
Tigala ...	28,780	5,709	17,037	1,446	551	182	1,293	45	55,943
Uppár ...	1,979	2,584	11,023	34,669	10,742	8,157	9,812	13,070	92,036
Wáldar ...	27,355	21,210	16,304	7,810	4,413	12,626	5,712	20,316	115,766
Wakkaliga.	222,653	176,399	191,165	183,601	237,236	56,584	59,576	69,735	1,190,949
Total.....	487,192	406,783	445,536	490,379	389,203	264,193	176,558	361,765	3,621,609

Agasa or *Asaga*, washermen.—This caste includes the following sections, Maḍiváli, Mailiga, and Máchiya. They are also divided into Kannada Agasa and Telugu Agasa, who neither eat together nor intermarry. The class is a numerous one and met with in almost every village. They seldom follow any other profession than that of washing. Both men and women wash. Their proper beasts of burthen are asses. Their principal object of worship is Ubbe, the steam which issues from the pot of boiling water in which dirty clothes are steeped. Animals are sacrificed to the god with the view of preventing the clothes being burnt in the Ubbe pot. Under the name of Bhuma Deva there are temples dedicated to this god in some large towns, the service being conducted by pújáris of the Agasa caste. They also worship Vishnu and other gods. Their gurus are Satanis. The Agasa is a member of the village corporation. The office is hereditary and the duties, besides washing, include the bearing of a torch in public processions before the images or high officers. Of the whole number only 8·2 per cent are engaged in agriculture, and 2·6 as labourers.

Besta, fishermen and palanquin bearers.—This is the name by which the caste is known more particularly in the Nundydroog Division. In Nagar they are called Kabbára and Gange Makkalu, in Ashtagram they are called Toriya, Ambiga, and Parivára. They also call themselves Bhóyis, which appears to be the Telugu name of the caste. A small number from Bombay and Bengal are known as Kahars. The following are the sub-divisions of the Bestas :—

Ráy Rívuta, Chammadi, Kolavar, Kabbár or Gange Makkalu, Bojoru and Maleboi, Toriya, Parivára, Párigitti, Channavarasiga, Ambiga, Káru.

This class is met with everywhere throughout the Province. Their language is both Telugu and Canarese. The special trade of the caste is that of fishermen and palanquin bearers. They are acknowledged to be pure Sudras, but of a low rank. They have no caste divisions, but all eat together, though intermarriage only takes place between families well known to each other, so as to avoid all danger of an impure race. They worship all the Hindu deities, but pay special homage to water deified under the name of Gangamma or mother Ganges. Their gurus are Brahmans, and Morava swámi of the Baba Budan hills in Nagar Division. A large proportion of them are engaged in agriculture and labour. Those who appear as manufacturers are weavers of cloth and lime-burners. Many of their females are cotton spinners. Those in the

employment of Government are peons, &c. Most of the caste are worshippers of Siva.

Bédar or Náyak, hunters.—The following are the sub-divisions :—

Kirátaka, Yanamalóru, Ráyapálya, Kannaiyana Játi, Muchala-mire, Sabara, Gujjára, Báríka, Set-tiyála, Anchiála, Paluvyálha, Myása bédar.

This caste is also called Kirátaka, Báríka, and Kannaiya in different parts of the country. There are two divisions, Karnáta and Telinga, who neither eat together nor intermarry. The former wear the linga and are found in considerable numbers in Bangalore District. Those in the north-eastern part of the Province are mostly of Telinga descent, and retain the language of their native country. Like the Brahmans the caste is divided into gótrams, and marriage never takes place between two persons of the same gótrán. In former days the caste were hunters and soldiers by profession, now their principal occupation is agriculture, labour and Government service, in which they are employed as peons and village police. Most of the Mysore Pálegárs belong to this caste. They are chiefly Vishnuvites, but worship all the Hindu deities.

Banajiga, merchants and traders.—The sub-divisions are :—

Námadhári Maluva, Aravattu-wokkala-setti, Rájabanna, Bidára, Fasluváte, Telugu Banajiga, Gauri Kulam, Vaduga, Mutta Ráju, Dévádiga, Chiravalu, Rájabandar, Yale Banajiga, Dása Banajiga, Náidu and Kavare, Gópatiga.

Of these the principal are Telugu, Dása, Yale and Gópati Banajigas. Telugu Banajigas came originally from Madras and the Northern Circars, and allege that all Banajigas are descended from a person called Prithivi Malla Setti, who by his first wife (a Vishnuvite) had the ancestors of their tribe, and by his second wife (a Sivite) had the ancestors of the Lingáyat Banajigas. The followers of both religions are divided into a number of sub-sects, none of whom eat together or intermarry. The caste are permitted to eat meat and drink spirits. One of the sub-sects, called Balegara, Devádigas or Bannagars, do not indulge in either animal food or spirits, and therefore claim to be superior to the rest of the caste. This sect are manufacturers of glass-bangles, a large collection of which they worship as a god. The gurus of the Banajigas are certain chiefs of the Srivaishnava Brahmans, and Panchángis of the Smárta Brahmans. The Kavare and Náidus are also grouped under Banajigas. A good many females of these latter are able to read and write. The principal occupations of Banajigas are agriculture, labour and trade of all kinds. They are also brick-layers, carpen-

ters and lime-burners, musicians and dancers. Many of the dancing girls belonging to the temples are of the Banajiga caste.

Darji, tailors,—divided into Ashtaghar, Simpi or Chippiga, Námadév and Rangüre. These are Sudras from the Mahratta country, and are also known by the names of Rangüre and Námadév. They worship all the Hindu deities, but more particularly Viṭṭhóba, a Mahratta name for Krishna. They are generally tailors and calico printers.

Gúñiga, oil pressors.—They are known by different names according to the customs of the sects in following their trade, such as Heggúñigas, those who yoke two oxen to the stone oil-mill, Kirgúñigas, those who make oil in wooden mills, Onṭiyettu Gánigas, who yoke only one animal to the mill, and Yenṇe Télugaru, those who clarify oil. They are known collectively as Jótipans and are found scattered all over the Province. They are both Vishnuvites and Sivites, but worship their oil-mills principally. The Heggúñigas wear a sacred thread after marriage, given by their guru. Making and selling oil are the principal occupations of the caste; some are engaged in agriculture and labour.

Góniga, Sack weavers, makers of gunny bags.—They are divided into Janaba, Sanapa and Sādu Vamsasta. They are chiefly found in the Nundydroog Division. They are principally Vishnuvites, but worship all the Hindu deities. Some of the caste are agriculturists and labourers.

Golla, Cowherds and dairymen.—The divisions are:—

Yákula or Yáṭivakula, Kilári, Kavádiga, Káḷu Golla, Kuri Golla, Gópála, Nanda Vamsika.

The Gollas are a numerous class; they are principally congregated in Nundydroog Division and Chitaldroog District. In Chitaldroog and Kolar they are called Yákulas. There are two divisions of the caste, called Gollas and Uru Gollas, who neither eat together nor intermarry. They worship Krishna, who is said to have been born in the caste, and also cows. Formerly they were largely employed in transporting money, both public and private, from one part of the country to another, and are said to have been famed for their integrity in such matters. Their chief occupations now are tending cattle, agriculture and labour. The sub-sects called Kilári and Kavádigas are sellers of milk, &c. The caste is divided into families or gótrams, and, as is usual in such cases, marriage is not permitted between members of the same family. Nearly all herdsmen and attendants on cattle belong to this class.

Gudikára, Turners and carvers.—These are from the Mahratta country, and nearly all settled in Sorab taluk of the Shimoga District.

They speak a mixed dialect between Canarese and Mahratti, and are nearly equally divided between the worship of Vishnu and Siva. They are by trade turners and carvers in wood, and by this class is performed all the sandal-wood carving for which Mysore is famous.

Iliga, Toddy drawers.—Divided into :—

Sánár, Eaddéra, Sásimore, Dívar, Mómál, Háléri, Hombiliga, Pangulavaru, Bella Reddi, Halepaika or Halepaiki.

This caste is met with in considerable numbers all over the Province, except in Kolar and Bangalore Districts, where they are not numerous. They worship all the Hindu deities, also Saktis or evil spirits, and especially adore pots containing toddy. The hereditary occupation of the caste is to extract the juice of palm trees and to distil spirits from it; they are also agriculturists, particularly in Shimoga District. In the Nagar Division they are known as Halépaika, and were formerly employed as soldiers under the Pálegárs. They eat animal food, but are prohibited from drinking toddy or spirits even of their own manufacture, a prohibition which it is needless to say is seldom regarded.

Kumbára—composed of Sáliváhana and Gundaina Játí—potters and indigo dyers (*níligára*). The potmakers and dyers form one caste, the common name to both being Kumbára. The two trades, though distinct, are followed by persons of the same family according to inclination, but the caste itself, like most others in the Province, is divided into two nations, Telugu and Karnáta, who do not intermingle. The latter are supposed to be the superior. The caste follow no other trade but the hereditary occupations of making earthen vessels and dyeing. It is curious and contrary to experience to find two such different occupations carried on by the same families of one caste. Under ordinary circumstances, especially as the custom is of no recent date, the dyers or *níligára* might be expected to form a sub-sect of the principal caste. They worship all the Hindu deities, but pay special reverence to their kiln.

Kuruba, shepherds. The sub-divisions are :—

Heggade, Aidu-varaháda-sála, Nágar Kula, Sávanti Kula, Sangama Kula, Peddala Ku'a, Atikankana, Hálú Kuruba, Hande Kuruba, Dhanaga, Kambali Kuruba, Kankaiyana Játí, Bandá Núlrú.

This is a numerous class, scattered all over the Province. They are divided into two tribes, called Hande Kuruba and Kurubas proper, who have no intercourse with each other. The latter worship a deity called Bire Dévaru, but most of them are returned as Sivites. Their priests are Brahmans and Jógis. The caste also worship a box which they believe contains the wearing apparel of Krishna, under the name

of Junjappa. Their occupations are agriculture, herding, labour, and blanket weaving. Their women spin wool.

Muchi or *Jin-gára*, shoemakers and saddlers.—These are immigrants from the Mahratta states, which language they retain. They profess to be of the Kshatriya class, but this is not admitted, though they are allowed to be a superior sort of Sudra. About two-thirds of the whole number are Sivites.

Náyinda or *Hajána*, barbers.—These are divided into :—

Kelai, *Náyún*, *Mánu* Karnátika, *Konda Mangula*.

They are both Vishnuvites and Sivites, and have Brahmans as their priests. But those who are Lingáyats have returned themselves under that head. They speak both Canarese and Telugu, and are generally employed as musicians as well as barbers. The *Náyinda* is a member of the village corporation.

Nejiga, weavers.—The sub-divisions are :—

Sakunasále, *Padmasále*, *Jála*, *Kuruvina*, *Settigára*, *Bilimagga*, *Dévanga*, *Togata*, *Séniga*, *Révanakara*, *Kaikal*, *Paṭvegár*, *Katri*, *Jamakhánaválás* or *Paṭuúválás*.

Of the *Dévangas* the *Karnataka Dévangas* are weavers who wear the *linga*, but are distinct from *Panchama Banajigas*. They worship Siva with his consort *Párvati* and their son *Ganésa*, who is a special patron of their looms. There are also *Telugu Dévangas*, who are divided into two sects, one of whom worship Vishnu and the other Siva, but these latter do not wear the *linga*. This difference of religion is no bar to intermarriage. The wife adopts the religion of her husband. Both *Karnátaka* and *Telugu Dévangas* have the same guru, and the *Panchanga* Brahmans are the priests of all, except the *Telugu Dévangas*, who worship Vishnu and are followers of *Srivaishnava* Brahmans.

The *Senigas* are a wealthy caste of weavers, who emigrated about a century and a half ago from the Lower Carnatic and settled in this Province. Their language is Canarese. They eat in the houses of the *Panchama Banajigas*, but do not intermarry with them.

The *Sále* is a caste of *Telinga* origin, and divided into two sects, who have separate chiefs, and do not intermarry. These sects are called *Sakunasále* and *Padmasále*. The former are Sivites and wear the *linga*; their gurus are *Ainóru** of *Panchama Banajigas*. Brahmans attend on domestic occasions, such as marriage, death, &c., to recite mantrams. The *Ainóru* also attends at such times, especially at marriage feasts, to wash the feet of the bridegroom and offer him consecrated food. They

* That is, *Aiyanavaru*, cf. *Annor*, p. 368.

have a sacred book called *Sálésvara Purána*, containing the doctrines of the sect, which every one is permitted to read. The *Pádmásále* are worshippers of Vishnu. The entire caste are said to have been originally Sivites and wearers of the *linga*. The change of religion among *Padmasále* is said to have occurred at a time when they implored Siva to turn the devil out of a haunted house, but finding their prayers had no effect, they laid aside the *linga* and addressed themselves to Vishnu, who expelled the devil, since which time they have been worshippers of the latter deity. Their guru is a *Srivaishnava Brahman*.

The *Togaṭaru* are weavers of Telinga origin, and manufacture the coarsest kinds of cloths, such as are worn only by the poorer classes. They follow no other trade. They are *Vishnuvites*.

The *Bīḷimagga* assert they are one of the pure tribes of *Banajigas*, and call themselves *Kuruvina Banajigaru*: the term *Bīḷimagga* they consider a nick-name. They are an original *Karnatik* tribe and are divided into *gótrams*, with the same customs regarding affinity of marriages as *Brahmans*. They are Sivites and have the same gurus as the *Panchama Banajigas*.

The *Paṭvēgárs* are silk weavers, and speak a language allied to *Mahratti*. They worship all the Hindu deities, especially *Saktis* or evil spirits, to whom they offer a goat as sacrifice on the night of the *Dasara* festival, a *Muhammadan* officiating as slaughterer, for which he receives certain fees. After the sacrifice, the family of the *Paṭvēgára* partake of the flesh. The caste have the reputation of being filthy in their habits.

The *Katri* are also silk weavers, and in manners, customs and language are akin to *Paṭvēgárs*, but do not intermarry with them, although the two castes eat together. The *Katris* claim to be *Kshatriyas*, and quote *Rénuka Purána* as their authority. The legend is that during the general massacre by *Parasu Rama* of the *Kshatriyas*, five women, each of whom was big with child, escaped and took refuge in a temple dedicated to *Káli*. When the children came of age their marriages were celebrated, and their mothers prayed to *Káli* to point out some means of livelihood. In answer to their supplications the goddess gave them looms, and taught them weaving and dyeing. The *Katris* claim descent from these refugees and follow the same trades. *Katris* and *Paṭvēgárs* are met with principally in *Bangalore* and *Chitaldroog* Districts. There are very few of them in other parts of the Province.

The *Jamkhánválas* are immigrants from the Madras Presidency, where they are known as *Patnúlvas*. They are manufacturers of a superior kind of woollen carpets, a few being engaged in cotton and silk weaving. The whole caste are Vishnuvites, and their gurus are hereditary chiefs of Srivaishnava Brahmans of the *Tátáchár* and *Bhatráchár* families. They speak a dialect peculiar to themselves.

Of the total number of the *Neyige* or weaver classes, nearly one-fourth are engaged in their caste trade, 4,862 in agriculture, and 3,551 are labourers. The 4,211 shewn as miscellaneous artizans, are cotton spinners.

Natva, dancers.—The names of their sub-divisions are :—

Kaiko'a, *Basavi*, *Kundā Gōlaka*, and *Náikasáni*, *Natvānga* or *Dévalási*.

This can scarcely be called a caste in the strict sense of the term; the individuals belonging to it being in many cases affiliated to the caste and not born in it. Many individuals of the *Súdra* castes, such as *Telugu Banajigas*, *Dédars*, *Bestas*, &c., who follow the occupation of dancing and singing, are called *Natvas*, from the Sanskrit word *nátya* which means dancing. The females of the caste are prostitutes, and are either born in it or adopted from any of the Hindu castes. The adoption takes place in various ways. Sometimes the parents of the girl have dedicated her to the caste even before her birth. The female *Natvas* attached to temples are called *Dévalásis* and *Basavis*. There is a class called *Kundagōlakas*, signifying prostitutes by birth, met with in the *Nagar* Division, who have been included under the head *Natva*.

Sádar.—Composed of *Námadháris*, *Siváchárs* and *Jains*. The *Sádars* are *Dhárwar Sudras*. They are a sub-sect of *Banajigas* and *Jains*. The whole tribe appear originally to have been *Jains*, but are now divided into three classes according to the religion they follow. The majority are worshippers of *Siva*, one-tenth of *Vishnu*, and a small number of *Jinesvara*. All of them eat together and intermarry, the wife as usual in such cases adopts the religion of her husband. They are chiefly met with in *Nagar* Division and part of *Túmkúr* District. The principal occupation of the caste is agriculture.

Uppár, saltmakers.—This caste is called *Uppára* in the *Nundydroog* Division, *Uppáliga* in *Ashtagram*, and *Mélusakkare* in *Nagar*. It is divided into two classes, *Karnátaka Uppára* and *Telugu Uppára*. The former are principally engaged in making earth-salt, and the latter

as bricklayers and builders. A fair proportion are also agriculturists and labourers. They are both Vishnuites and Sivites, but chiefly worship salt pans.

Waddar, consisting of Bója, Yattinavaru, Kallu wadda, Mannu wadda, Bailu wadda. Waddas are Sudras, originally from Orissa and the Telugu country. They worship all the Hindu deities from Vishnu and Siva down to evil spirits. The two principal divisions are the Kallu or stone Waddas, and the Mannu or earth Waddas. The former consider themselves the superior. They are stone masons and are very dexterous in moving large masses of stones by very simple mechanical means. The earth Waddas are chiefly tank diggers, well sinkers, &c. Both stone and earth Waddas are a hard-working class while engaged in any work; but they have the reputation of assisting professional thieves in committing dacoities and robberies, principally, however, by giving them information of where and how to obtain an easy booty. Waddas are polygamists on a large scale, few of them being satisfied with one wife, and some even indulging in as many as eight. They consider that their comfort is proportionate to the number of wives they keep. The marriage ceremony is not a tedious one; it consists of the bride and bridegroom walking three times round a stake placed for the purpose in the ground. Re-marriage of widows and divorced women is permitted. The men and women of the caste eat together. Their occupations are chiefly agriculture, labour, buildings and working in stone.

Tigala or *Palli*, include Vanne kula, and Námadbári Halepaika. These are Sudras of Tamil origin and are principally market gardeners. They are divided into two sects called Ulli Palli and Vanne Palli. The two eat together, but do not intermarry. The caste have no regular guru; they worship all the Hindu deities and pay special reverence to Dharma Ráya. They are chiefly congregated in the Nundydroog Division.

Modali and *Pille*, including the sub-division Agamudi. The Modali and Pille caste are Sudras from the Madras Presidency. They are generally a well educated class, and many of them are employed under Government; they also engage in trade of all kinds, and as contractors for buildings, &c. A fair proportion of their females are able to read and write. They are worshippers of the Hindu triad, and have Brahmans as their priests.

Wakkigas or *Wakkaligas*, farmers and cultivators.—The following are the sub-divisions :—

Gangadikára, Kóve, Uppina Kolaga, Swalpa, Héma reddy, Mótáti, Jotradava, Arvediga, Ajamára, Malava, Maniga, Námadhári, Tuluva, Angalika, Kúli Belaga, Pandáru, Bóggaru, Male Gauda, Náduvar, Bandéru, Kusali, Rájapuri, Hanuma, Singadavaru, Yéḷumaneyavaru, Yelanáti, Kodati, Pákináti reddy, Vettina Kunchitiga, Tanda gauda, Maddaru, Megada, Holakalavaru, Dasavantige, Roddagáru, Aiamatti, Gampala Kaiméru, Gósangi, Musuku Wakkiga, Kambavalli, Morasu Wakkiga, Sankara játi, Sanna Kodu, Gangi Wakkiga, Hallikára, Hale Wakkalu, Káma Wakkalu, Kunchitiga, Lálagunda, Devan Maklu, Nonaba, Reddi, Samudra kula, Kammévár.

Many of these names are current in particular districts, and sects apparently identical in manners and usage, bear a different designation in different parts of the country. It is to be regretted that statistics are not available of the numbers under each head. The Wakkigas are of both nations, Telinga and Karnátaka, and are divided into Vishnuvites and Sivites, some of the latter wearing the linga, and some not. They all eat together without distinction of nation or creed, but only intermarry in their tribes, and with particular families, whose purity of descent they consider as well known.

The Gangadikár and Nonaba Wakkigas are doubtless the representatives of indigenous tribes who formed the subjects of the Gangavádⁱ and Nonambávadi provinces, which occupied the greater part of Mysore up to the 12th century. The Gangadikars are found principally in the Ashtagram Division, in which quarter Gangavádi was situated. Nonambávádi was the north and west of the Chitaldroog District. Gubbi in Tímákú District claims to have been founded by the hereditary chief of the Nonaba Wakkigas. The Morasu Wakkiga are most numerous in the Nundydroog Division. Some account of them is given under Bangalore District. One sub-division in the name Samudra Wakkiga commemorate their descent from the girl who fled, as there related, to save her honour and whose pursuers were overwhelmed by the stream over which she had passed in safety.

A peculiar custom prevails among one branch of the Morasu Wakkigas by which the women suffer amputation of the ring and little fingers of the right hand. 'Every woman of the sect previous to piercing the ears of her eldest daughter, preparatory to her being betrothed in marriage, must necessarily undergo this mutilation, which is performed by the blacksmith of the village for a regulated fee by a surgical process sufficiently rude. The finger to be amputated is placed on a block, the blacksmith places a chisel over the articulation of the joint, and chops it off at a single blow. If the girl to be betrothed is motherless, and the mother of the boy have not before been subjected to the operation, it

is incumbent on her to perform the sacrifice. The origin of so strange a practice is thus related :—

A Rákshasa (or giant) named Vrika, and in after times Bhasmāsura or the giant of ashes, had, by a course of austere devotion to Mahadéva, obtained from him the promise of whatever boon he should ask. The Rákshasa accordingly demanded that every person on whose head he should place his right hand might instantly be reduced to ashes; and Mahadéva conferred the boon without suspicion of the purpose for which it was designed. The Rákshasa no sooner found himself possessed of this formidable power, than he attempted to use it for the destruction of his benefactor. Mahadéva fled; the Rákshasa pursued and followed the fugitive so closely as to chase him into a thick grove, where Mahadéva, changing his form and bulk, concealed himself in the centre of a fruit, then called Tonda Pandu, but since named Linga Tonda from the resemblance which its kernel thenceforward assumed to the Linga, the appropriate emblem of Mahadéva.

The Rákshasa having lost sight of Mahadéva, enquired of a husbandman who was working in the adjoining field whether he had seen the fugitive, and what direction he had taken. The husbandman who had attentively observed the whole transaction, fearful of the future resentment of Mahadéva, and equally alarmed for the present vengeance of the giant, answered aloud that he had seen no fugitive, but pointed at the same time with the little finger of his right hand to the place of Mahadéva's concealment. In this extremity, Vishnu descended in the form of a beautiful damsel to the rescue of Mahadéva. The Rákshasa became instantly enamoured; the damsel was a pure Brahman, and might not be approached by the unclean Rakshasa. By degrees she appeared to relent; and as a previous condition to farther advances, enjoined the performance of his ablutions in a neighbouring pool. After these were finished, she prescribed as a farther purification the performance of the sandhya, a ceremony in which the right hand is successively applied to the breast, to the crown of the head, and to other parts of the body. The Rákshasa, thinking only of love, and forgetful of the powers of his right hand, performed the sandhya, and was himself reduced to ashes.

Mahadéva now issued from the Linga Tonda, and after the proper acknowledgments for his deliverance proceeded to discuss the guilt of the treacherous husbandman, and determined on the loss of the finger with which he had offended as the proper punishment of his crime. The wife of the husbandman, who had just arrived at the field with food for her husband, hearing this disgraceful sentence, threw herself at the feet of Mahadéva. She represented the certain ruin of her family if her husband should be disabled for some months from performing the labours of the farm, and besought the deity to accept two of her fingers, instead of one from her husband. Mahadéva,

pleased with so sincere a proof of conjugal affection, accepted the exchange, and ordained that her female posterity in all future generations should sacrifice two fingers at his temple as a memorial of the transaction, and of their exclusive devotion to the god of the linga. The practice is accordingly confined to the supposed posterity of this single woman, and is not common to the whole sect of Morasu Wakkal.'

The Lálagondaru deny their being Sudras, and say that they are Linga Banajigas ; but that race will neither eat in their houses nor give them their girls in marriage. They are a tribe of Karnátaka descent, and are farmers, bullock hirers, gardeners, builders of mud walls, and traders in straw, &c. ; the men are allowed to take as many wives as they like ; women continue to be marriageable after the age of puberty, and are very industrious in spinning and working in the fields. They pray to the spirits of good men, thinking that they are the occasion of dreams which tell future events. They worship Saktis. They are entirely debarred from eating animal food and drinking spiritual liquors. They are of two sects ; those that are of the Vishnu sect are followers of Sri-vaishnava Brahman priests living at Ahóbalam, and those that are of the Siva sect follow the Lingayat Gurus ; they have their own hereditary chiefs besides, who settle domestic disputes.

The Reddi or Kamma Reddi Wakkiga sect is a numerous one, and is to be found chiefly in Chitaldroog, Shimoga and Kolar Districts. They are of both Telugu and Karnatak extraction. They are permitted to eat animal food, but not to drink spirituous liquors, though the use of bhang (an intoxicating drug) is not forbidden.

There are altogether about 62 sects of Wakkigas, who are only distinguishable by name, and most of whom have no peculiar customs deserving of remark.

Jains.—These interesting people, whose religion was long the dominant creed in Mysore, and to whom the vernacular languages of southern India perhaps owe more in regard to the early cultivation and enrichment of their literature than to any other class, are distributed as in the margin. They are most numerous in Ságar, Heggadadevankote, Hassan and Vastára taluks, more than a fourth of the whole number being settled in the first. The chief seats of their religion in Mysore are at Sravana Belgola in Hassan District, Maleyur in Mysore District, and Humcha in Shimoga District. The chapter on Religion will contain some account of the

Bangalore...	562
Kolar ...	651
Túmkúr ...	1,475
Mysore ...	2,214
Hassan ...	1,954
Shimoga ...	4,042
Kalúr ...	1,312
Chitaldroog	825

Total... 13,035

origin and tenets of the sect. Their chief occupations are agriculture and trade : as artisans they are workers in brass.

Lingayats—This is not properly a caste, but a religious designation embracing many castes. But in order to accord with the census returns they are taken to represent one caste. The sub-divisions are :—

Jánagonda, Basale, Cávani, Gávaniga, Narali, Nágálíka, Aidugadagadavaru, Pávaliyóru, Wára bande, Sujana, Silavanta, Tamadi, Kóriyavaru, Panchamasále, Pancháchára, Arádyá, Virabhande, Kambe, Hiri Hasube, Linga Banajiga, Gauda Lingáyat, and Gurikára.

The numbers and distribution of the Lingáyats according to the	
Bangalore...	36,430
Kolar ...	9,354
Túmkúr ...	32,109
Mysore ...	138,249
Hassan ...	70,168
Shimoga ...	52,701
Kadur ...	34,747
Chitaldroog	44,142

census report are as shewn in the margin. They are thus most numerous in the south of the Mysore District, especially in Chamrajnagar taluk, where there are 30,000. In Gundlupet, Nanjangud, Talkad and Mysore taluks respectively there are about half that number. In other Districts, Belur taluk in Hassan and Tarikere in Kadur contain the most. These results, however, do not appear to me to accord with facts, as the Lingayats are believed to have a decided preponderance in the north of the country. They engage in all kinds of trade, but more especially in agriculture. The principal seats of their religion, the rise of which is elsewhere described, are Balehalli in Vastara, Murigi in Chitaldroog, and Ujani in Bellary just beyond the Kankuppa frontier.

The chief caste among Lingayats are Linga Banajigas. They are as rigorous as Brahmans in their abstinence from eating meat and drinking liquor, and more bigoted in the strict observance of their customs and rules. In this caste only are women during their periodical illness admitted into society. Their priests will not permit themselves to be touched by any one who does not wear the linga. When a Linga Banajiga is buried, the linga is placed in his mouth.

Marka.—A caste claiming to be Brahmans, but not recognized as such. They worship the Hindu triad, but are chiefly Vishnuvites and wear the trident mark on their foreheads. They are most numerous in the south of the Mysore District, which contains five-sixths of the whole number. The great majority of the remainder are in Hassan District. The distribution is as given in the margin. There are none in Túmkúr and Chitaldroog. They call themselves Hale Kannadiga or Hale Karnátaka, the name Márka* being considered as one

* Said to be derived from *ma*, a negation, and *arka*, sun, in allusion to their not performing the adoration of that luminary which is customary among Brahmans.

of reproach, on which account also many have doubtless returned themselves as Brahmans of one or other sect. They are said to be descendants of some disciples of Sankarácharya, the original guru of Sríngéri, and the following legend is related of the cause of their expulsion from the Brahman caste to which their ancestors belonged.

One day Sankarácharya, wishing to test his disciples, drank some toddy in their presence, and the latter thinking it could be no sin to follow their master's example indulged freely in the same beverage. Soon after, when passing a butcher's shop, Sankarácharya asked for alms; the butcher had nothing but meat to give, which the guru and his disciples ate. According to the Hindu shástras red-hot iron alone can purify a person who has eaten flesh and drunk toddy. Sankarácharya went to a blacksmith's furnace and begged from him some red-hot iron, which he swallowed and was purified. The disciples were unable to imitate their master in the matter of the red-hot iron, and besought him to forgive their presumption in having dared to imitate him in partaking of forbidden food. Sankarácharya refused to give absolution, and cursed them as unfit to associate with the six sects of Brahmans.

The caste is again making a strong effort to be readmitted among Brahmans, and some have recently become disciples of Parakálaswami. Their chief occupations are agriculture, and Government service as shanbhogs or village accountants. They are all Mysoreans except five persons.

Panchala.—The Pánchála comprise five classes of handicraftsmen, namely, Agasála or goldsmiths; Bogára or Kanchugára, brass and coppersmiths; Kammar or Lohár, ironsmiths; Badági, carpenter; and Kallu kuṭaka, stone workers. They profess to be descended from the five sons of Visvakarma, the architect of the gods, who severally embraced these professions. The sub-divisions under this caste are :—

Oja, Badági, Gejjegára, Lohár, Maya, Fattari, Sonár or Snagára, Tavaradoru, Hanatáru, Gampala Kammára, Bogára or Kanchugára, Jalugára, Silpi or Kallukutaka, Visvakarma, Agasále, and Anékammára.

They are thus distributed :—

District.					Male.	Female.	Total.
Bangalore	...	...	...	...	6,384	6,370	12,754
Kolar	...	...	...	...	4,164	4,119	8,283
Támkúr	...	...	...	...	4,702	4,638	9,340
Mysore	...	...	...	...	13,212	12,914	26,126
Hassan	...	...	...	...	8,602	8,303	16,905
Shimoga	...	...	...	...	7,164	6,826	13,990
Kadur	...	...	...	...	4,162	3,935	8,097
Chitaldroog	...	...	...	...	4,333	4,023	8,416
Total.....					52,783	51,128	103,911

The Páñchála wear the triple cord, and consider themselves as equal or superior to the Brahmans, who deny their right to this sacred emblem. The goldsmiths are admitted to be the head of the clan, and have a caste jurisdiction over the rest. The various trades are not confined to particular families, but may be followed according to the individual inclination. There are two sects of Páñchála,—Vishnuvites, numbering 26,802, and Sivites ; but the difference in religion is neither a bar to intermarriage nor an interruption of social intercourse. The most numerous and richest of the caste belong to the Sivite section, and wear the linga ; but they never associate with the Pancham Banajigas, and are in fact their bitterest enemies.

Mendicants.—For few things are the Hindus so remarkable as for their rigorous performance of self-inflicted punishments and austerities in the name of religion. These are either done to propitiate favour for the future, to atone for some misdeed, or in fulfilment of some vow. The penances often consist of actual mutilations of various kinds, distortion of members of the body for a length of time until the muscles by continued tension can no longer exercise their natural functions, withdrawal from all intercourse with human beings, exposure of the naked body in all weathers, and other austerities, not unfrequently accompanied with habits of the most filthy description. Fakir and Bairági are the popular names given to fanatics of this kind ; the former is generally applied to Muhammadans, and the latter to Hindus. Such men are looked on as beings of a sacred character, and are liberally supplied with alms wherever they may wander. Although the two names just mentioned are commonly used in a generic sense, there are many sects of religious mendicants principally distinguished from each other by the particular divinity whose devotees they are, and sometimes also by the caste to which they belong. The names of the sub-divisions, 37 in number, are the following :—

Kanjála, Kádri (a class of Sátáni), Pádasi, Handigadaga, Rénuka Jangam, Rénadu Jangam, Samagi or Sameráya (a class of Sátáni), Suragi (a class of Sátáni), Handichikaru, Demangala, Pádás or Panasu-makkalu or Halé-makkalu, Kutuma, Kulasekhara (a class of Sátáni), Anéganti Baitala, Gógangi, Jógi, Kasavarájulu, Mailári, Sólare, Budabudike, Bairági, Dásari, Domba, Gáradiga, Gondaliga, Gósáyi, Helava or Pichukunte, Pákináti Jógi, Wader or Charanti, Silílekya, Sudugádu Sidda, Sátáni, Virakta (Linjayat), Jangliga, Battaru, Gorava.

They are thus distributed in each District :—

District.					Male.	Female.	Total.
Bangalore	...	...	...	...	6,285	6,369	2,654
Kolar	...	...	...	...	4,678	4,821	9,499
Támkúr	...	...	...	...	4,858	4,722	9,580
Mysore	...	...	...	...	4,521	4,231	8,752
Hasan	...	...	...	...	4,948	4,906	9,854
Shimoga	...	...	...	...	5,739	5,277	11,016
Kadur	...	...	...	...	3,220	3,149	6,369
Chitaldroog	...	...	...	...	8,762	6,424	15,186
Total.....					41,011	39,899	80,910

Of the whole number 37,162 are votaries of Vishnu, and 43,748 of Siva. The following is an account of a few of the chief sects.

Gosáyis.—Followers of Chaitanya, the Vishnuvite reformer of the 16th century, whose original disciples, six in number, were so named. They never marry. Brahmans, Kshatriyas, Vaisyas and Sudras, the two former especially, may if they choose become Gosáyis; but if they are admitted and unite with the members of this fraternity in eating and drinking, holding full and free intercourse with them, they are cut off for ever from their own tribes. It is this circumstance which constitutes the Gosáyis a distinct and legitimate caste and not merely a religious order.* Those who lead a strictly ascetic life appear to be called Avadútas, while those Gosáyis who engage in commerce and trade are called Dandis. The number in Mysore is small. They are all immigrants from Northern India and mostly belong to the Dandi sub-division. They are generally wealthy merchants, are located only in Mysore, Seringapatam and Bangalore, and trade largely in jewels and valuable embroidered cloths. The profits of their traffic go to their Mahant or teacher. The property of either Avadúta or Dandi devolves on his adopted disciple or chela.

Sátáni.—These are known by several different names;—Kádri, Suragi, Samagi, Chátáli, Kulasekhara, &c. Some of them are employed in agriculture, but as a rule they are engaged in the service of Vishnuvite temples, and are flower gatherers, torchbearers and strolling minstrels. Sátánis are regarded as priests by the Holayars and other inferior castes, while they themselves have the chiefs of the Sri Vaishnava Brahmans and Sanyasis as their gurus. Buchanan supposed them to be the remains of an extensive priesthood who formerly held the same relation to the Holayars that the Brahmans now do to the Sudras. But as a sect they appear to be of more modern origin. They call themselves Vaishnava, and correspond to the same class in Bengal, or Baisnabs as they are there called. They are followers of Chaitanya, from whose name, or that of Sátánana, one of his disciples, their designation may be derived; though according to some it means those who do not wear the

* SHERRING, *Hindú Tribes and Castes*, 255.

lock of hair or *juṭṭu* as other Hindus do. Properly speaking they are not a caste, but a religious sect of votaries of Vishnu, more especially in the form of Krishna, who have ceased to regard caste distinctions. By the Brahmans they are ranked as Sudras. In the north of India admission to the sect is obtained by payment to a Gosáyi and partaking of food with other members of the sect.

Jangama.—These are priests and devotees of the Pancham Banajigas or chief Lingáyats; they are also called Waṇeyars, Charantis, and Viraktas, and correspond to the Vaidikas among Brahmans. In addition to the linga, which they always wear, they use a necklace of beads called rudráksha, and smear their whole bodies with the ashes of cowdung. A Jangam will not permit himself to be touched by any person who does not wear the linga. They wander about and subsist on charity, and their children generally adopt the same profession.

Jógi.—This class of mendicants is composed of devotees from all parts of India, and is recruited from all castes. They are also called Pechchekuntas, Sillekýátas, Killekýátas and He'avas. There is a sect of Telugu mendicants of this class who call themselves Jangala. These latter deal in drugs, and wander about calling out the particular diseases which they profess to cure by means of their wares. Jógis as a class pretend to be fortune-tellers, and many of them lead about malformed and misshapen cattle, which form a part of their stock in trade and assist them in obtaining alms and charity from a wondering audience.

Dásari.—Are mendicants belonging to different castes of Sudras. They become Dásas (servants of god) by virtue of a particular vow, made either by themselves or relatives at some anxious or dangerous moment. Dásaris are strictly Vishnuvites, as the vow is only taken by castes who are worshippers of that deity. Dásaris are always invited by Sudras on ceremonial days and feasted. They have the reputation of being a very bigoted and dissolute set of fanatics.

Bairági.—These are from northern India, and followers of Rámánand, the Vishnuvite reformer who early forsook the cares of the world and gave himself up to Vairágya, *i. e.*, seclusion from all cares and anxieties, and was the first Vairági (commonly called Bairági). This guru took four disciples, who gathered around them numbers of followers and taught them their religious tenets. After the death of Rámánand, the four disciples disputed about the succession as chief, and separated in consequence. From them sprung four different sects, called Rámánandis, Bhisháns, Nimávats and Kubávats, who neither eat together nor intermarry. Each sect is composed of two orders,—the Nihangs, who are purely ascetics and lead secluded lives, and the

Sámayógis, who marry and live with their families, but both orders can eat together. Many profess to be physicians and herbalists, while others pretend to be alchemists all of them are beggars, and as pilgrims resort to holy places, and especially to Tirupati. Bairágis are all worshippers of Vishnu, and adherents of Srivaishnava Brahmans. They are mostly taken from the Sudra castes, but many of them wear the triple cord, and profess themselves to be Gauḷa Brahmans from the north.

Buḍuluṭike.—These are beggars and fortune-tellers from the Mahratta states; they pretend to consult birds and reptiles, and through them to predict future events. They are worshippers of Hanumán, the monkey god.

Gondaliga.—Are also of Mahratta origin, and worshippers of Durga, wife of Siva. They are mendicants and musicians, and generally in attendance at marriages among Mahratta Brahmans, who do not consider the ceremonies complete unless Gondaligas sing and play through the night.

Panasu makkalu or *Hale makkalu*.—These appear to be a class of mendicants attached to certain castes from whom alone they accept alms. They are not a distinct caste of themselves, but a sub-division of the particular caste from whom they receive charity. As the name implies, they seem to be descendants of some faithful and devoted servant, who forfeited perhaps life in the service of his master, and whose children were in gratitude fathered as it were on the employer's caste with the privilege of receiving certain dues therefrom. The following castes are said to have Hale makkalu attached to them: Kómati, Kuruba, Ágasa, Siváchár, Gaudagolla, Gangaḷikár wakkaliga, Mádigá. Those of the Komatis are called Kanchala Viraru, and wear red-coloured clothes, with a breast-plate engraved with the likeness of Vira Bhadra. They are entitled to receive from each Komati a yearly fee of one fanam, and the usual dues on the celebration of marriage, &c. It is the duty of the Hale makkalu to learn the pedigree of those members of the parent caste living in their immediate neighbourhood, which they carefully repeat when going round the beat to collect their dues.*

Dombar.—These can scarcely be called religious mendicants though they are wandering beggars. They are supposed to be the descendants of an aboriginal tribe from the north of India (Doms probably). They speak a language allied to Hindustani. They are a class of buffoons, posture-makers, tumblers, and snake-charmers, and are universally looked down upon and despised by other castes. They worship all the Hindu deities.

Bhát or *Bhátta ráju*.—These are from the Northern Circars, and were originally attendants on Hindu princes as professional sycophants, singing their praises and reciting wondrous deeds of their ancestors. Now, from want of

* Cf. *Ind. Ant.* II, 29.

their ordinary employment, they have descended into the mendicant class. They worship Vishnu chiefly. They speak Telugu, and are met with in Mysore and Bangalore.*

Outcastes.—The various classes coming under this head number 44. The following are their names:—

Holaya (Balagai), Mádiga (Yedagai), Belli kula, Holúra kula, Dasa kula, Játamále, Chinnada kula, Kade arasu-makkalu, Kanada Valiha, Chandike, Tirukula, Hulisavára, Panjevár, Bhumi kula, Pále, Máre, Biggaru, Tangala, Channah, Haralish, Kalluráya, Samagáma, Bánya, Módára, Chilaravaru, Halantaru, Maharu, Bálabasava, Jambava, Ajánika, Yanjalatogala, Masala, Gantichaudi, Kakkaiyanajati, Matangala, Chakraválya, Pallar, Kadébágáloru, Logattár, Váveru, Ééchavada, Javákina, Valluvar, Alémán.

The extent to which they are found in each District is exhibited below. There is evidently a great preponderance in the southern half of the country.

District.				Male.	Female.	Total.
Bangalore	...	...	...	70,055	70,518	140,573
Kolar	...	...	...	55,893	55,594	111,487
Túmkúr	...	...	...	39,913	41,749	81,662
Mysore	...	...	...	86,471	88,884	175,355
Hassan	...	...	...	63,304	65,609	128,913
Shimoga	...	...	...	51,325	29,033	80,358
Kadur	...	...	...	30,064	27,318	57,382
Chitaldroog	...	...	...	23,762	28,483	52,245
Total.....				406,787	407,188	813,975

The two principal classes of outcastes are the Holaya† and the Mádiga, the former the lowest of the right hand faction, and the latter the lowest of the left hand. They accordingly often call themselves Balagai and Yedagai in preference, as the other designations are considered terms of reproach.

There are two tribes of Holaya in Mysore, the Telinga Holaya and Karnáta Holaya. They all eat together, but the two nations do not intermarry. They are looked upon as unclean by the four principal castes, and especially so by Brahmans; a degradation which the Holaya seems patiently to acquiesce in, so much so that when he has to deliver anything to a Brahman he places it on the ground and retires

* The name is a curious approximation to that of the western *bará*, and their offices are nearly similar. No Hindu Rája is without his *bháts*. Haidar, although not a Hindu, delighted to be constantly preceded by them, and they are an appendage to the state of many other Musalman chiefs. They have a wonderful facility in speaking in-provisatore, on any subject proposed to them, a declamation in measures, which may be considered as a sort of medium between blank verse and modulated prose; but their proper profession is that of chaunting the exploits of former days in the front of the troops while marshalling for battle, and inciting them to emulate the glory of their ancestors. WILKS, I, 13.

† Or Holeya, as it is generally spelled, meaning *unclean, impure*

to a distance, and when meeting in a street or road he endeavours to get away from his superior as far as possible.

The Mádigas are to the left-hand caste what the Holayas are to the right-hand. There is no apparent distinction between them, and both are considered equally unclean. The Mádigas are leather dressers, an occupation in which Holayas do not seem to engage. Mádigas and Holayas hold no intercourse with each other. The former, like the latter, is divided into two tribes, called after the nationality to which they originally belonged.

Wandering Tribes.—The principal wandering tribes are Korachars or Kormas, Brinjaris or Lambánis, and Médars. But the following subdivisions occur:—

Bandikára, Médar or Gaurigí, Lambáni, Brinjári, Sukálign, Tambúri, Sabbávat, Dádi, Khetávat, Bhútya, Rámávatpáda, Dhúmávatpáda, Kyataiyana-játi, Koraga, Korama, Koracha.

The wandering tribes were thus distributed at the time of the census:—

District.				Lambáni.	Koracha.	Chitka.	Méda.	Total.
Bangalore	...	...	...	1,675	10,235	56	70	12,036
Kolar	...	...	...	703	3,515	...	...	4,218
Támkúr	...	...	...	1,398	3,200	...	...	4,598
Mysore	...	...	...	1,431	3,014	...	1,031	5,476
Hassan	...	...	...	47	5,062	...	...	5,109
Shimoga	...	...	...	12,937	4,125	...	939	18,001
Kadur	...	...	...	8,782	4,003	...	...	12,785
Chitaldroog	...	...	...	6,295	3,498	...	473	10,266
Total.....				33,263	36,652	56	2,513	72,484

Lambáni or Brinjári.—The origin of the Lambánis is unknown, perhaps even to themselves, as they acknowledge no home or country but their miserable hut for the time being. They were first prominently brought to notice about the end of last century, during the wars with the Mahrattas and Tippu, when immense numbers of them were employed by the armies of both sides as foragers and transporters of supplies required for the troops.* They are to be met with all over Mysore, wandering about in gangs, accompanied by large herds of bullocks, especially in the hilly and forest tracts where there are few good roads. They find employment in transporting coffee, grain, &c., from the interior to the coast, and bring back a return load of salt. Of late years many of them have been employed as labourers on coffee estates, and some have even partially abandoned their vagrant life and settled, at least for a time, in villa-

* A correspondent from the British camp at that time terms them 'the worthy and inoffensive Brinjaris'. *Cal. Gaz.* II, 318,

ges established for them near the estates on which they work. Their gypsy nature, however, breaks out every now and then, when some of them decamp without a moment's notice, not to appear again until after some months of wandering. Like the Korachar they are thieves from infancy, and wherever they are located it is found that robberies and other violent crimes are certain to increase. They speak a dialect of Hindustani, and it is presumed that they are immigrants from some part of northern India, probably Rajputana. They worship all the Hindu deities, and particularly Bāneshankari, the goddess of forests. In a police report regarding these people, Dr. Shortt states, "that their social system is unique, and that they are guided exclusively by their own laws and customs ; that each community is governed by a priest, who exacts and receives implicit obedience, and who exercises, under the cloak of religion and supernatural agency, the undisputed power of life and death over them. They maintain the closest secrecy regarding their customs, and would sooner forfeit life than divulge them. Infanticide, human sacrifice, witch craft and sorcery prevail among the different communities, who can recognize one another by masonic signs."

The women are distinguished by a curious and picturesque dress, completely different from that worn by any other class. It consists principally of a tartan petticoat, and a shawl or mantle, often elaborately embroidered, which covers the head and upper part of the body. The hair is worn in ringlets or plaits hanging down each side of the face, decorated with small shells and terminating in tassels. The arms and ankles are profusely covered with trinkets made of bone, brass and other rude materials.

Korachar.—These are thieves and robbers from childhood, and wander about with large droves of cattle and asses, carrying salt and grain from one market to another. They carry with them the framework of a rude description of hut, and while one part of the tribe proceeds with the baggage animals, the others settle for a time in some convenient spot, where they erect their huts and employ themselves in making mats and baskets, begging and stealing until their proximity becomes a nuisance to the villagers and they are compelled to move on. They are constantly associated with Brinjāris and other wanderers in burglaries, dacoities and acts of violence, and often escape detection owing to their complete arrangements for obtaining information. They speak Telugu and Tamil, and are said to have a peculiar gypsy language of their own,

and a system of signals which enables them to converse with the initiated unobserved. They have no idols to which they pay particular homage, and only invoke Tirupati Venkatramana when in distress, and vow small offerings of money to the temple should they escape.

The men tie up their hair in a large bunch or chignon on one side of the top of the head, in precisely the same manner as we find the men's hair arranged on most of the old sculptured stones of the country. The women wear an immense number of strings of small white and red beads and shells round the neck and falling over the bosom. (See p. 312).

Wild Tribes.—The names of the races included among wild jungle tribes, the remnants perhaps of the aborigines, are the following—

Irala, Paniyar, Yerava, Dilva, Hasula, Malasi, Arikara, Sôliga, Malâru, Masalar, Kâdu or Betta Kuruba, Jênu Kuruba.

Their distribution is as under :—

District.	Hasula.	Dilva.	Iraliga.	Sôliga.	Yerava.	Paniyaru.	Kâdu and Jenu Kurubas.	Total.
Bangalore	...	...	1,653	83	2	...	...	1,738
Kolar	...	...	172	...	...	...	...	172
Tânkûr	...	...	95	10	...	...	...	105
Mysore	...	...	197	968	670	268	1,819	3,922
Hassan	...	...	3,602	...	...	...	...	3,602
Shimoga	4,795	19	644	8	...	...	91	5,557
Kâdur	502	815	...	...	...	...	137	1,454
Chitaldroog	...	...	...	...	...	...	19	19
Total.....	5,297	834	6,363	1,099	672	268	2,066	16,569

Betta or *Hill Kuruba*, also called *Kâdu* or *Jungle Kuruba*, are met with chiefly in the forests along the south-western boundary of Mysore, and among the hills at the foot of the Nilgiri range. They live in small rudely built villages called *hûlis*, and earn a livelihood by felling timber, at which they are very expert. Of late years a good many of them have sought employment as labourers on the neighbouring coffee estates. They are a diminutive race, the men being about 5 feet 2 inches in height; but they are very active and capable of enduring great fatigue. They have been referred to in the earlier part of this chapter.

Jênu Kuruba.—This tribe is called *Jênu* or *Honey Kuruba* from their chief employment, which is collecting honey and bees' wax. They are said to be inferior to the *Betta Kuruba* and much darker in colour. They are met with in the same forests and living in villages of the same description as the hill tribe, but the two races are quite distinct and do not live together.

Sólíga.—This tribe is almost entirely confined to the Biligirirangan hills on the south-east frontier of Mysore, where there are no other inhabitants but themselves and wild animals. They live in small communities of 6 or 7 huts in the dense parts of the forests, and cultivate with the hoe small patches of ground, where they grow a coarse kind of plantain, vegetables and a little ragi; on these, together with edible roots and the flesh of any animals they may capture, they subsist. They avoid strangers as much as possible, and seldom visit the low country unless when they have occasion to procure supplies, when one of their number is sent off to the nearest village to purchase whatever is required for the whole community. Owing to their keenness of sight, and skill in tracking animals, they are invaluable aids to any sportsman who visits the hills in search of game. The Sólíga are supposed to be an aboriginal race, and speak Old Canarese.

Iralíga.—There seems to be little difference between this tribe and Jénu Kurubas except the name. They both collect honey, wax and other forest products, and live in forests apart from the rest of the population.

Hasular.—This tribe resemble the Sólíga. They are met with along the Gháts on the north-western frontier of Mysore. They are a short thick-set race, very dark in colour and with curled hair. Their chief employment is felling timber, but they sometimes work in areca-nut gardens, and gather wild cardamoms, pepper, &c. They speak a dialect of Canarese.

Yerava.—These are only found in Mysore District, in the taluks forming the southern frontier; they are said to have originally belonged to Wainád, where they were held in slavery by the Nairs. They resemble the African in features, having thick lips and compressed noses. They speak a language of their own.

Bilva.—This tribe is found in the Vastara country, and should perhaps have been included with the Halepaika or Idiga. They extract toddy from the palm tree, and seem to live by collecting forest produce much in the same way as the other wild tribes do.

Muhammadans.—There are four classes of pure descent among Muhammadans: Shekhs, Sayads, Moguls and Pathans. But although good families doubtless remain in various parts, the bulk are of mixed descent, due to intermarriage and conversions, voluntary or enforced. Shekh denotes properly a lineal descendant from Muhammad through Abu Bakr

and Omar ; and Sayad (lord or chief) a descendant through Ali and Husen. But these titles have probably been often assumed by converts without reference to their signification. Pathans are of Afghan origin, descendants of Kutb ud Din and his followers ; while Moguls are descended from Tartar chiefs who followed Tamerlane into India.

The Muhammadans may here be grouped under the following heads:—

Arabs, Persians and Afghans.
Dakhni Musalmans.

Labbe and Mápíle.
Pindári or Kákar.

These are distributed according to the following statement :—

District.				Arabs, Persians and Afghans.	Dakhni Musalmans.	Labbe and Mápíle.	Pindári or Kákar.	Total.
Bangalore ...	...	...	...	232	51,986	698	569	53,485
Kolar ...	...	...	...	...	24,978	46	14	25,038
Támkúr ...	...	...	...	4	19,196	9	1,336	20,535
Mysore ...	...	...	...	276	36,798	1,635	1,081	39,790
Hassan ...	...	...	...	1	14,181	78	200	14,460
Shimoga ...	...	...	...	15	25,346	34	203	25,598
Kálar ...	...	...	...	7	11,897	81	32	12,017
Chitaldroog ...	...	...	...	7	17,973	6	82	18,068
Total.....				542	202,355	2,587	3,507	208,991

Of the whole number 92·8 per cent or 194,011 are Sunis, 7·1 per cent or 14,839 Shiáhs, and 141 Vahabis.

Arabs, Persians and Afghans.—Of these, there are 117 wholesale and 33 retail traders in cloth, &c. : horse dealers number 25. From Arabia come 52, from Persia 29, from Candahar 116, and the rest from the following parts,—Bombay 197, Haidarabad 72, and French and Portuguese settlements in India 33.

Dakhni Musalmans.—Under this head are included 96·8 per cent of the Muhammadans in the Province. They are engaged in occupations of all kinds, the principal being agriculture, labour and Government service, especially in the military department, and as peons. The employment of Pinjáris, who number 3,836 is, as their name indicates, cleaning cotton. There are 933 horse dealers and farriers. A considerable body of Muhammadans till recently gained a livelihood by rearing silkworms, but the apparently irremediable disease which has destroyed the insects for some years past has reduced numbers to poverty and forced others to emigrate.

The Dáire or Mahadavis settled in Channapatna, though numbering only 648 males and 729 females, form a peculiar sect which demands notice. They differ from the general body of Muhammadans in a point

of belief concerning the advent of the prophet Imám Mahadi. The Dáires maintain that he has visited this earth and departed, while the orthodox Muhammadans believe the prophet has not yet appeared, and that his coming will be a sign of the end of the world. The following account of the origin of this body of dissenters has been related.

A child was born among the Sayad sect of Muhammadans at Gujarat about 400 years ago, who was named Sayad Ahmed, and afterwards became distinguished by the title Alam (superior to Maulvi) in consequence of his great learning. Sayad Ahmed proclaimed himself the equal of Mahomet and superior to all other Paigambers or messengers of God. He succeeded in obtaining some followers who believed in him, and repaired to Jivanpur in the Nizam's Territories, where he took the name of Imam Mahadi. From thence he with some disciples proceeded to Mecca, but did not visit Medina; after some time he returned to Hyderabad, still retaining the name of Imam Mahadi. Such pretensions could not be tolerated by the great mass of Muhammadans, and Sayad Ahmed together with his disciples being worsted in a great religious controversy, were driven out of Hyderabad and came to Channapatna in the Bangalore District, where they settled. The descendants of these settlers believe that Sayad Ahmed was the prophet Imam Mahadi predicted in the Koran. They offer prayers in a masjid of their own separate from other Muhammadans, and do not intermarry with the rest.

Labbe and Mápíle.—These are by origin descendants of intermarriage between foreign traders (Arabs and Persians) and women of the country, but the same designations were taken by the children of those forcibly converted to Muhammadanism in the persecutions of Tippu. The Mápíle are principally confined to the Malabar coast. The origin of the Labbe is thus related by Wilks :—

In the early part of the eighth century, Hijaj Ben Gusaff, Governor of Irak, a monster abhorred for his cruelties even among Musalmans, drove some persons of the house of Háshem to the desperate resolution of abandoning for ever their native country. Some of them landed on that part of the western coast of India called the Concan; the others to the eastward of Cape Comorin. The descendants of the former are Neváyats; of the latter, the Labbe. The Labbes pretend to one common origin with the Nevayats, and attribute their black complexion to intermarriage with the natives; but the Nevayats affirm that the Labbes are the descendants of their domestic slaves, and there is certainly in the physiognomy of this very numerous class, and in their stature and form, a strong resemblance to the natives of Abyssinia.

Nearly three-fifths are natives of the Madras Presidency, and visit the country temporarily for purposes of trade.

Pindaris.—Formerly this was a gypsy tribe of Muhammadans, and acted in large predatory gangs that have caused many wars in India. They have now adopted a settled mode of life, and are found engaged in agriculture and Government service, chiefly in the Mysore Horse.

Christians.—The total number of Christians is 25,676, of whom 13,526 are males and 12,150 females. The following is a statement of the distribution of each class :—

District.	Europeans.		Eurasians.		Native Christians.		Total
	Male.	Female.	Male.	Female.	Male.	Female.	
Bangalore	2,878	1,411	1,060	1,385	5,313	5,741	17,788
Kelar	11	3	22	9	305	263	613
Tumkur	29	26	34	33	200	212	534
Mysore	74	36	104	92	995	948	2,249
Hassan	57	21	37	27	1,292	1,236	2,670
Shimoga	25	9	17	18	520	395	984
Kadur	36	20	29	18	337	128	568
Chitaldroog	10	5	18	18	123	96	270
	3,120	1,531	1,321	1,600	9,085	9,019	25,676.
Totals.. ...	4,651		2,921		18,104		

Of those in the Bangalore District, 2,756 Europeans (2,147 male, 609 female) and 334 Eurasians (146 male, 188 female) belong to the military stationed in the Cantonment of Bangalore ; and nearly all the rest, forming the civilian population, reside in the same place. The majority of the Europeans in the Hassan and Kadur Districts are coffee planters.

An inquiry into the nationality of the Europeans shews that 2,302 are English, 439 Scotch, 862 Irish, 12 Welsh, 37 French, 37 Germans, 10 Swiss, 6 Portuguese, 2 Italians, 4 Danes, 1 Greek, and 3 Dutch. The remainder are not specified. There are also 5 Americans, 1 Australian and 12 Africans.

According to creed the Christian population is thus divided :—

Class.				Protestants.	Roman Catholics.	Not stated.
Europeans	...	...	...	3,652	977	32
Eurasians	...	...	...	1,948	937	36
Native Christians ..	...	...	...	1,744	16,343	17
Total.....				7,344	18,257	75

In the rural districts the Native Christians are most numerous in the Hassan District, where a Roman Catholic agricultural community has long existed at Sathalli * and other villages. There are also a good many in certain villages of the Kankanhalli taluk and the south of Bangalore District. In the towns besides Bangalore and Mysore, which of course have by far the greatest number of Native Christians, they are most numerous in Hassan, Shimoga, and Ganjam, the suburb of Seringapatam.

Others.—These are 14 *Brahmos* and 43 *Parsis*. The former are all resident in Bangalore: and it is believed that the real number of adherents of this sect is larger. The Parsis are nearly all, or 37, settled in Mysore. Of the remainder, 1 belongs to Bangalore, 1 to Shimoga, 1 to Davangere and 3 to Harihar. All are engaged in trade.

Urban Population.

The extent of the urban or suburban population may be gathered from the following statement:—

District.	Number of Towns or Villages containing a population of—									Total.
	Less than 200	200 to 500	500 to 1,000	1,000 to 2,000	2,000 to 3,000	3,000 to 5,000	5,000 to 10,000	10,000 to 15,000	Above 50,000	
Bangalore ...	1,419	860	202	43	7	7	5	...	...	1
Kolar ...	1,965	750	147	39	4	2	4	...	...	...
Túmkúr ...	1,469	738	212	49	7	5	...	1	...	...
Mysore ...	812	802	402	131	14	11	...	1	1	...
Hassan ...	2,039	956	161	25	6	1	2	...	...	...
Shimoga ...	2,080	532	175	34	6	1	...	1	...	...
Kadur ...	1,506	357	108	29	7	1	1	...	...	...
Chitaldroog ...	645	565	226	62	7	2	4	...	...	...
Total.....	11,935	5,540	1,633	412	58	30	17	3	1	1

Subjoined is a list of the towns with a population exceeding 5,000:—

Bangalore ...	...	...	142,513	Davangere ...	...	...	...	6,596
Mysore ...	...	...	57,815	Harihar ...	...	...	...	6,401
Túmkúr ...	...	...	11,170	Hassan ...	...	...	...	6,305
Shimoga ...	...	...	11,034	Chitaldroog ...	...	...	...	5,812
Seringapatam ...	...	...	10,594	Devanahalli ...	...	...	...	5,771
Kolar ...	...	...	9,924	Hosur ...	...	...	...	5,751
Chik Ballapur ...	...	...	9,882	Closetpet ...	...	...	...	5,460
Dod Ballapur ...	...	...	7,449	Tarikere ...	...	...	...	5,302
Channapatna ...	...	...	7,101	Hole Narsipur ...	...	...	...	5,253
Sidlaghatta ...	...	...	7,009	Malvalli ...	...	...	...	5,114
Anekal ...	...	...	6,612	Turvanur ...	...	...	...	5,072

* Which see, Vol. II.

To estimate the growth of towns during the present century, the following are the only statistics that have been procured for comparison with the census return of 1871 :—

Town.					1852.	1858.	1871.
Bangalore	...	...	...	...	134,628	175,630	142,513
Mysore	...	...	...	...	54,729	55,761	57,815
Seringapatam	...	...	...	...	12,744	14,928	10,594
Shimoga	...	...	...	...	...	14,186	11,034
Támkúr	...	...	...	...	...	9,339	11,170

It is difficult to draw any inference from these figures, but it does not look as if much change were going on in the relative numbers of the rural and urban population.

The agricultural population is very inadequately returned at only 20·5 per cent on the whole. In explanation of this it is stated that 'a large proportion of petty shopkeepers, weavers, and other artisans, who have returned themselves as such, own or rent land which is cultivated by themselves and other members of their families, so that properly speaking, they are as much agriculturists as weavers, &c. Very few Brahmans moreover have returned themselves as agriculturists, though it is a notorious fact that as a body they are large land-holders and engage directly in agriculture, though they will not actually hold the plough. In many instances their lands are sub-let to ryots, who cultivate the land and pay half-produce. There is every reason to believe that numbers of such Brahmans and Brahman inámdárs have returned themselves as Vaidikas, Laukikas or Khushbásh, that is, engaged either in religious or worldly affairs, or else leading a happy life, *viz.*, doing nothing.'

Other particulars regarding the occupations, &c. of the people are given under each District in Vol. II.

Character, Dress, &c.

The people of Mysore are a hardy and well-formed race, fairer as a rule than those of the low country, and with regular features. 'I have never' says Buchanan 'seen finer forms than even the labouring women of that country frequently possess. Their necks and arms are in particular remarkably well shaped'.

In public character and disposition they may be described as the most conservative of the South Indian races. In practice, perhaps they ex-

hibit a greater aptitude for the labours of the field and the tending of cattle than for other occupations. With the bucolic turn of mind there is no doubt much stolidity to be found among the agrestic hinds, and till lately predial slaves, but accompanied with blind devotion and simple fidelity to their masters. The better specimens of headmen, on the other hand, are dignified and self-reliant, commanding and gaining respect, proud of hospitality, sagacious observers, shrewd in conversation and with a vein of homely good sense and humour. The industrial classes and field labourers are very hard-working, especially the women.

The dwellings of the people are generally built of mud, one storeyed and low, with few, if any, openings outwards except the door, but possessed of courtyards within, surrounded with verandahs and open to the sky. In the better houses these are well paved and drained, while the wooden pillars are elaborately carved or painted. The huts of the outcaste and poorer classes are thatched, but the houses of the higher orders are covered with either terraced or tiled roofs, the latter more especially in the west, where the rainfall is heavy.

The villages are pretty generally surrounded with a thick hedge of thorn, a protection in former days against the attacks of the Mahratta cavalry. For the same reason the entrance is often a flat-arched stone gateway, so constructed as to present an obstacle to a horseman. In the districts lying north-east from the Baba Budans, villages commonly have a round tower in the middle, a somewhat picturesque feature, erected as a place of retreat for the women and children in case of attack. Most important villages and towns have a considerable fort of mud or stone, the erection of former troublous times, when every gauda aimed at being a pálegar and every pálegar at becoming independent. The fort is the quarter generally affected by the Brahmans, and contains the principal temple. The péte or market, which invariably adjoins the fort at a greater or less distance beyond the walls, is the residence of the other orders.

There is seldom any system in the arrangement of streets, which are often very roughly paved, and nearly always abounding in filth. The only motive for the formation of wide and regular streets in some of the towns is to provide for the temple car being drawn round at the annual festival. All other lines of way are irregular beyond description.

White or coloured cotton stuffs of stout texture supply the principal dress of the people, with a woollen *kambli* as an outer covering for the

night or a protection against cold and damp. Brahmans are bareheaded, the head being shaved all except the tuft at the crown (*juṭṭu*), and most of the Hindus observe the same practice. The moustache is the only hair permanently worn on the face. The *dhotra*, a thin sheet, covers the lower limbs, one end being gathered into folds in front and the other passed between the legs and tucked in at the waist behind. A similar garment is thrown over the shoulders. To protect the head, a bright magenta worsted cap is often donned, such as a brewer's drayman wears, but not in the same jaunty manner, for it is pulled well down over the ears and back of the neck. This and a scarlet, green, or blue blanket are favourite articles of attire for the early morning or on a journey. In attending offices Brahmans wear a turban (*rumāl*) and a long coat (*angī*), either woollen or cotton. This also is more or less the costume of the merchant class. The ryots are generally content with a turban and a kambli, with most frequently a short pair of drawers (*challaṇa*). When not at work they often wear a blouse or short smock-frock.

The dress of the women is generally very becoming and modest. A tight-fitting short bodice (*kupsa*) is universally worn, leaving the arms, neck and throat bare, the two ends being tied in a knot in front. It, is generally of a gay colour, or variegated with borders and gussets of contrasting colours, which set off the figure to advantage. In the colder parts to the west, a somewhat loose jacket, covering all the upper part of the body and the arms, is worn instead. The *shāre* or *sāri*, a long sheet, the ordinary colours worn being indigo or a dull red with yellow borders, is wrapped round the lower part of the body, coming down to the ankle. One end is gathered into a large bunch of folds in front, while the other, passed across the bosom and over the head, hangs freely over the right shoulder. In the west it is tied there in a knot. The Brahmani women pass the lower end of the cloth between the legs and tuck it in at the waist behind, which leaves the limbs more free. Their heads too are not covered. The hair is gathered into one large plait, which hangs straight down the back, very effectively decorated at the crown and at different points with richly chased circular golden cawls and bosses.

The Vaisya women are similarly dressed, but often with less good taste. As the fair golden-olive complexion natural to most Brahmani girls is much admired, those of the sex who are not so fair smear themselves with saffron to produce a yellow tint, and not only on their cheeks

but over their arms and legs. This practice, which seems very common with the trading class, is by no means attractive. Neither is the habit of blackening the teeth, adopted by married women. Many fair women are elaborately tattooed on the arms from the wrist to the elbow. The Sudra women generally gather the hair into a bunch behind, stuffed out with a fleece of wool, and run a large pin through, with an ornamental silver head to it, which is rather becoming.

Ornaments are commonly worn in the ear and on the arms, with rings on the fingers and toes, and as many and costly necklets and chains round the neck as means will allow. Chains frequently connect the upper rim of the ear with the ornamental pin in the back hair, and have a pretty effect. The richer Brahmani and other girls wear silver anklets, often of a very ponderous make, which are by no means elegant. A silver zone clasped in front is a common article of attire among all but the poorer women, and gives a pleasing finish to the graceful costume.

It would be useless to go through a description of the varieties of Hindu dress in different parts. The only marked differences are in the Malnad as described under Manjarabad, and the dress of the Lambáni women.

The Muhammadan dress for men differs chiefly in cut and colour, and in the wearing of long loose drawers. But for undress a piece of dark plaided stuff is worn like the dhotra. Muhammadans shave the head completely, but retain all the hair of the face. A skull cap is worn, over which the turban is tied in full dress. The women wear a coloured petticoat and bodice, with a large white sheet enveloping the head and the whole person and pulled also over the face.

The higher Hindus wear leather slippers, curled up at the toe and turned down at the heel, but the labouring classes wear heavy sandals, with wooden or leather soles and leather straps. The Muhammadans also wear the slipper, but smaller, and frequently a very substantial big shoe, covering the whole foot. Women are never shod, except occasionally on a journey, when they sometimes wear sandals.

Members of the various Hindu orders are known by the sectarian marks painted on their foreheads. The women wear them smaller, and subordinated to ornamental effect. The Lingayats are known by the peculiar-shaped silver box, the shrine of a small black stone emblematic of the linga, which is worn suspended by a string from the neck and hanging on the chest. The working classes of that order often tie the

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RELIGION.

The earliest religious worship probably sprang from a desire to propitiate powers from whom injury to one's person or property might be feared. In what manner this feeling came to find expression in the worship of the serpent is not easy to say. But from the time when that 'most subtle of the beasts of the field' beguiled Eve, the mother of mankind, down to the present day, it has never failed to be the object of sacred rites. Mr. Fergusson has shewn how extensively this worship has prevailed in every country on the face of the globe.

In India, this land of many gods, serpent worship, specially that of the deadly hooded cobra, is of great antiquity and survives to this day. There is scarcely a village in Mysore which has not effigies of the serpent, carved on stone, erected on a raised platform near the entrance for the adoration of the public.* The living serpent is in many parts systematically worshipped, and few natives will consent to kill one.† The body of one that has been killed is often solemnly disposed of by cremation, while a cobra which takes up its abode, as they sometimes do, in the thatch or roof of the house, is generally not only left undisturbed, but fed with milk, &c.

The Nágas who so frequently occur in ancient Hindu history were no doubt a wide spread race of serpent worshippers, and there is every reason to believe that they occupied most parts of Mysore. The traditions that indicate this have been mentioned in the historical portions of this work. Jinadatta, the founder of Humcha, married a Nága *kanya*; and the great serpent sacrifice by Janamejaya is said to have taken place at Hiremagalur. An inscription at Balagami,‡ of the 11th century, bears at its head the half-human half-serpent forms of a Nága and Nágini. The wor-

* The orthodox arrangement consists of three slabs, set up side by side. The first bears the figure of a male cobra, with one or more heads, of an odd number up to seven: the middle slab exhibits the female serpent, the upper half of human form, generally crowned with a tiara, and sometimes holding a young serpent under each arm: the third slab has two serpents intertwined in congress, after the manner of the Æsculapian rod or the *caduceus* of Mercury, with sometimes a *linga* engraved between them.

† Some believe that the person who does so will be visited with leprosy,

‡ *Mys. Ins.* S. S. 92.

ship of the living serpent is not, I believe, uncommon in any part of the country: I have myself been witness to it at Magadi, at Panchalli on the Coorg border, and at Chikmagalur. A *hutta* or deserted ant hill, popularly regarded as the shrine of the god, is very often in reality the residence of a snake. From a similar sentiment arose the ancient custom of taking sanctuary by embracing an ant hill, a refuge as inviolable as the horns of the altar among the Jews.

With the worship of the serpent seems to be intimately associated that of trees, which again carries us back to the story of Eden and the mysterious tree of forbidden fruit. The stones bearing the sculptured figures of serpents near every village are always erected under certain trees, which are most frequently built round with a raised platform, on which the stones are set up, facing the rising sun. One is invariably a sacred fig, which represents a male, and another a margosa, which represents a female; and these two are married with the same ceremonies as human beings. The *bilpatre* (*ægle marmelos*), sacred to Siva, is often planted with them.

Whether the planting of topes—a term which in northern India signifies a Buddhist *stupa*, but here is applied to a grove of trees—had a religious origin or any connection with Buddhism is uncertain. It does not now seem to have a special relation to religion except as a work of charity. But particular trees and plants are held sacred to certain objects or deities, or are themselves regarded in that light. The *asvattha* or pipal, the sacred fig, is a common object of reverence as a sort of wishing tree. One on the bank of the N. Pennar near Goribidnūr, called the Vidur *asvattha*, is said to have been planted by Vidura, the uncle of the Pandavas, and is visited by all the country round. It is built round with various shrines for protection and is believed never to die. At Hunsur may be seen a large *neem* tree which is an object of worship. The lower part is enclosed in a shrine and the branches are hung with iron chains. Out of the Jain temple of Padmāvati at Humcha is growing a sacred tree called *lakke gida*, said to be the same that Jinadatta tied his horse to as described in the account of that place. The *bilpatre* or bael tree, as above stated, is sacred to Siva, while the *tulasi* or holy basil (*ocymum sanctum*) is sacred to Vishnu and is grown on an altar in the courtyard of Vaishnava houses. The *yekke* (*aristolia indica*) and the plantain are the subject of some curious rites.*

* See *Ind. Ant.* IV 5.

Connected apparently with tree worship is the regard paid to the *kakke* or Indian laburnum, which furnishes the central stake of the threshing floor, decorated at top with a little bunch of field flowers.

The general object of the worship of trees and of serpents appears to be for the purpose of obtaining offspring. A woman is nearly always the priest, and women are the chief worshippers.

Māriamma or *Māramma*, familiarly styled *Amma*, the mother, or in the honorific plural *Anmanavaru* *, is the universal object of rural worship, as the *grāma dévata* or village goddess. She seems to correspond in some of her attributes to Durga or Kāli, also called Chāmundi, and is explained to be one of the furies attendant on that goddess. Though bearing so tender an appellation as mother, she is feared and propitiated as the source of calamity rather than loved as the bestower of blessings.† She is supposed to inflict small pox,—which indeed is called after her, *amma*, as chicken pox and measles are called *chik-amma*,—and to send cholera and other epidemics upon those who have incurred her wrath. She is appeased only by the shedding of blood and therefore receives animal sacrifices. In former times there is no doubt that human victims were offered up at her shrine. She appears also to be the author of cattle disease. To avert this and other evils the sacrifice is annually made in many parts of a buffalo.‡ I find the following description of the ceremony by Mr. Elliot as performed in Manjarabad.

‘A three or four year old (male) buffalo is brought before the temple of *Māra*, after which its hoofs are washed and unboiled rice thrown over its head, the whole village repeating the words *Māra kōṇa*, or in other words buffalo devoted to *Māra*. It is then let loose and allowed to roam about for a year, during which time it is at liberty to eat of any crops without fear of molestation, as an idea prevails that to interfere with the buffalo in any way would be sure to bring down the wrath of *Māra*. At the end of that time it is killed at the feast held annually in honour, or rather to divert the wrath, of *Māra*.§

Almost every village has its *Māri guḍi*, though she sometimes bears various local names compounded with *amma*.

* This is evidently the *Amnūr* of the Todas mentioned in Col. Marshall's book, but by him misunderstood as the name of a place, answering to heaven.

† Buddhists believe in a kind of devil or demon of love, anger, evil and death, called *Māra*, who opposed Buddha and the spread of his religion. MONIER WILLIAMS, *Ind. Wis.* 58; Cf. WILSON, *Works*, II, 340.

‡ For a similar Toda custom see *Phren. am. Todas*, 81.

§ *Exper. of Pl.* I, 66. Reference is also there made to *Jour. Ethnol. Soc.* of July 1869 for further particulars by Sir Walter Elliot.

At the foundation of a village it is the practice to erect at some point of the ground two or three large slabs of stone, which are called *kari kallu* or *karu kallu*. These are also objects of worship, and are generally painted in broad vertical stripes of red and white. An annual ceremony is held in connection with them, when all the cattle of the village are presented before the stone. This is supposed to avert cattle disease. For the same purpose a sylvan god named *Kárama Ráya* is worshipped under the form of an acute conical mound of mud, erected on a circular base also of mud. At a little distance it looks not unlike a large ant hill.* This rude symbol may often be seen in a field in the open, with a bunch of wild flowers adorning the apex.

Another deity, or class of deities, is known by the name of *bhúta*, a word which is taken to mean demon, but may relate to *bhú táyi* or *bhúmi táyi*, Mother Earth, or the occult powers of Nature.† It is generally worshipped under the form of a few naturally rounded stones, placed together either under a tree or in a small temple and smeared with oil and turmeric. To avert calamity to crops from the *bhúta*, a rude figure of a man is sometimes drawn with charcoal on the ground at the angles of the field, and a small earthen vessel containing boiled rice and a few flowers broken over it. An offering is also made in some parts by a man walking round the skirts of the field, at every few steps casting grains of seed into the air, shouting out at the same time *ho bali!*‡

The various objects of superstitious awe described above may perhaps be classified as spirits of the air and spirits of the ground. The former include disembodied ghosts, those of the dead for whom the prescribed ceremonies have not been performed. The spirits of the air seem inclined to lodge in trees and burial places, and by them human beings are sometimes possessed or bewitched. Charms, consisting of a bit of metal engraved with a numerical puzzle in squares, are suspended round the necks of children to protect them against this danger, as well as against 'the evil eye,' and similar charms are inscribed on stones called *yantra kallu*, often erected at the entrance of villages. The spirits of the ground guard hidden treasure, breach tank bunds, undermine houses, stop the

* It bears a striking resemblance, in external form at least, to the Toda conical temple called by Col. Marshall the *boath*, though on a greatly reduced scale, much too small for an interior chamber *Phren. am. Tod.* ch. XIX. See the closing remarks regarding the *bothan* or bee-hive houses in Scotland, &c.

† The *pancha bhúta* are the five elements,—earth, air, fire, water, and ether.

‡ *Bali*—presentation of food to all created beings; it consists in throwing a small parcel of the offering into the open air.—BENFEY, *Sans. Dict.* s. v.

growth of the crops, and perform a variety of other malignant operations. All have to be propitiated according to their supposed influence and disposition.

The above are doubtless all relics of aboriginal or primitive beliefs and rites. The more regularly organized systems of Hindu faith may be described as four in number, associated with the worship respectively of Buddha, Jina, Siva and Vishnu. Though they existed contemporaneously in various parts, as is the case at the present day, each of these religions had its period of ascendancy to the virtual exclusion of the others.

Buddhism dates from the 6th century B. C., was at the height of its influence in the 3rd century B. C., and continued in power altogether for more than a thousand years. Jainism seems to have run its course during the same period,* but increased in power as Buddhism declined, and became predominant in the early centuries of the Christian era. In Mysore it ceased not to be influential till after the conversion in the 12th century of the Hoysala king, since known as Vishnu Varddhana, and the murder some time later of the Kalachurya king Bijjala by the Lingayats.

But prior to this a great revival had taken place of Brahmanical religion. The labours of Sankarāchārya, the first apostle of Sringeri, had in the 8th century dealt a death blow to Buddhism† and raised the Saiva faith to the first place. In like manner, in the 12th century, the Vaishnava religion gained ground, and through the teaching of the reformer Rāmānujāchāri put an end to the influence of Jainism. Vishnu worship thus became a national religion, but divided the empire with the followers of Siva, a compromise of which the form Harihara was symbolical, uniting in one person both Hari or Vishnu and Hara or Siva. For the reformation of the Saiva religion which was effected about the same time by Basava, ending in the establishment of the Lingayat sect, imparted to it a vitality which it has never since lost in the south, especially amongst the Kannada speaking races. Forty years later, a somewhat similar re-

* It is true that according to the Jaina books their faith had continuously flourished under a succession of teachers from the death of Mahāvira in B. C. 527 down to the present time. Hitherto, however, there was no tangible evidence to vouch for the truth of this statement. But the Kankālī mound at Mathura has now given us the most complete and satisfactory testimony that the Jaina religion, even before the beginning of the Christian era, must have been in a condition almost as rich and flourishing as that of Buddha. CUNNINGHAM, *Arch. Rep.* III. 46.

† According to some accounts the Buddhists of the south of India were exposed to a sanguinary persecution before this, in the sixth century or earlier, by a prince named Sulhanwan, at the instigation of Kumarila Bhatta, a Bengali or Maithili Brahman, the great authority of the *Nimamsukas*. WILSON, *Wks.* II, 366.

formation of the Vaishnava religion was brought about through the teaching of Madhvāchāri, and before another century further innovations were introduced by Rāmānand, and afterwards by Chaitanya and others.

Buddhism.—What form or forms of faith may have preceded the introduction of Buddhism into Mysore is mere matter of speculation.* But of this event we have a record which assigns it to the middle of the 3rd century B. C. The passage occurs in the Mahawanso and has already been referred to (p. 191). It points to a propagation of the Buddhist doctrines at that period in the Banavasi and Mysore districts, the west and south of the country, but of the success which may have attended on those efforts the traces are almost completely obliterated. The Jain traditions, however, preserve some memory of argumentative collisions with expounders of the rival system. Inscriptions record the maintenance, as one of five great mathas, of a Buddhist establishment (Bauddhālaya) at Balagami, the capital of the Banavasi country, down to 1098, and apparently the residence there at that time of a nun named Nāgiyaka.† For the east we have the evidence of the Pallava remains at Amarāvati and Mahābalipur that the kings of that line, in whose dominions the Kolar District was included, were Buddhists. Near Srinivasapur are traces of what were probably Buddhist erections. Wilson refers‡ to a Jain named Akalanka from Sravana Belgola, as having in 788 confuted the Buddhists in argument at the court of Hemasitala at Kanchi or Conjeveram, and thus procured their banishment to Kandy in Ceylon.

So many works are now available on the subject that it is unnecessary in this place to give more than the briefest outline of the life of Buddha and the doctrines he taught.

Gotama or Sākya was a Kshatriya, the prince of Kapila, south of Nepal. He was naturally of a serious disposition, and had become satiated with a life of pleasure and indulgence, during which every object of sadness had been studiously kept out of his view. The accidental sight, in succession, of an old man, a diseased man and a dead man, led him to reflect on the illusory nature of youth, health and life. This weighed on his mind until one day he saw a religious mendicant, calm in his renunciation of the world. It suggested to him a mode of relief. He fled at midnight from the royal palace and all its gay inmates, assumed the yellow garb of an ascetic, and gave himself up to austerities and

* In Mr. Fergusson's opinion 'it is nearly correct to assert that no people adopted Buddhism, except those among whom serpent worship can certainly be traced as pre-existing' *Tr. Ser. Wor.* 21.

† *Mys. Ins.* S. S. 47.

‡ *McK. Coll.* I, 127.

meditation in the forest of Buddha Gaya, acquiring the name of Sákya Muni. But penance and austerities had not power to appease his spiritual yearnings. Eventually, by meditation, he became a Buddha or Enlightened, in order that he might teach mankind the true way of deliverance from the miseries of existence. He entered upon his mission in the district of Magadha or Behar about 588 B. C., and died or attained *nirvána* at the age of 80, while travelling through the country of Kosala or Oudh, about 543 B. C.

After his death a council was held by Ajátasatru, king of Magadha, at which all the teachings and sayings of Buddha were collected into three sets of books, called Tripiṭaka, the three baskets or collections, which form the Buddhist sacred scriptures. Of these the Sūtra piṭaka contains the maxims and discourses of Sákya Muni, which had all been delivered orally; the Vinaya piṭaka relates to morals and discipline; and the Abhidharma piṭaka is philosophical. Three other great Buddhist councils were held, one in the middle of the 5th century B. C. by Kalasoka, when the scriptures were revised; the third by Asoka in 246 B. C., after which missions were sent abroad for the propagation of the faith; and the fourth by Kanishka, king of Kashmir, in 143 B. C., when the Tripiṭaka were finally established as canonical. According to some accounts they were not committed to writing before this.

Buddhism may be described as two fold, consisting of *dharma*, or religion, and *vinaya*, or discipline. Buddha's enlightenment had led him to recognize *existence* as the cause of all sorrow. *Avidya* or ignorance was the remote cause of existence, and *nirvána* or extinction of existence the chief good.

The dharma or religion was for the masses or the laity, the so-called ignorant, who had no longing for *nirvána* but only desired a happier life in the next stage of existence; for life* was held to continue through an endless series of transmigrations, introducing to a higher or a lower grade according to the merit or demerit of the previous existence. This religion was based upon the law of universal benevolence or kindness, and found expression in five great commandments, namely, against killing, stealing, adultery, intoxication, and lying, each of which was amplified into numerous precepts intended to guard not only against the commission of sin but against the inclination or temptation to sin. The practice of universal goodness or kindness, in thought, word and deed, was the only way by which man could raise himself to a higher state of existence.

The vinaya or discipline was for the wise, the monastic orders, those who cared not to continue in the vortex of transmigrations, but sought

* Of gods and animals as well as of men.

only to purify their souls from all desire for the hollow and delusive pleasures of the world and to escape from all the pains and miseries of existence into the everlasting rest of nirvāna. To effect this deliverance it was necessary to renounce five things, namely, children, wife, goods, life and self; in short, to lead a religious life of celibacy, mendicancy and strict discipline, in order that the soul might be freed from every stain of affection or passion. Four great truths, known as the *law of the wheel*, resulted in indicating four paths to nirvāna, namely, perfection in faith, in thought, in speech, and in conduct: and the only true wisdom was to walk in these paths.

At the time when Buddha began to proclaim his doctrines, all the affairs of life were regulated by the rigid code of Manu.* Religion consisted in ceremonial observances, which beset every moment of existence from birth to death, and its advantages were confined to an exclusive caste, whose instrumentality alone could render any ceremony efficacious. Buddhism was a revolt of the religion of humanity against the ritualism and asceticism, the lifeless superstition and arrogant pretensions of the Brahmanical priesthood.† It taught that religion consisted in the suppression of evil desire, the practice of self denial, and the exercise of active benevolence; and that men and women alike, and that of all castes, may equally enjoy the benefits of a religious life. Hence thousands and tens of thousands, both high and low, hastened to embrace the new faith, and Buddhism continued to grow till the time of Asoka, under whom it was established as the dominant religion of India.

Jainism.—The existence of the sect of the Jains, which is extensively dispersed throughout India, but most numerous in Gujarat, Dharwar, and

* But it may be questioned whether the code was not as much a theoretical system of the claims of the hierarchy as one in practical operation.—cf. Auguste Barth as translated *Ind. Ant.* III, 329.

† The revolt of Buddhism against Brahmanism is only to be appreciated by those who are familiar with the results of both systems. The India of the present day presents many of the characteristics which must have distinguished ancient India prior to the advent of Gotama Buddha. It is a land of deities, temples and priests. The whole Indian continent is dotted with little sanctuaries which appear like the sepulchres of defunct gods, whose grotesque and distorted effigies are to be seen within; and fathers and mothers bow down to these idols, praise them, propitiate them with gifts and offerings, and invoke them for help and prosperity. Again there are temples of more colossal dimensions, with pyramidal towers or cone shaped domes, covered with sculptures and surrounded by walls, court yards and robed passages. But all are of the same sepulchral character. Some are the receptacles of archaic gods, who are arrayed in jewels and tincl; but even these deities are little better than the gaudy mummies of a primal age. The women alone seem to be fervent worshippers, for the men have begun to grow beneath the oppression of idolatry and Brahmanism. Indeed the rapacity of the temple priests is unbounded, whilst their culture is beneath contempt. They celebrate their festivals like children playing with dolls. They carry the gods in procession, or induce the gaping crowd to drag them along in huge idol cars; but they cannot evoke those joyous outpourings of adoration or thanksgiving which indicate the presence of religious feeling in the hearts of the worshippers. *WHEELER, Hist. Ind.* III. 94.

Mysore, was first brought to light by Colonel Mackenzie, the distinguished officer who conducted the survey of Mysore in 1799 and following years. Their origin is still involved in obscurity. But they have so much in common with the Buddhists that either the Gotama of their traditions, the chief disciple of their great apostle Mahavira, was the same as Gotama Buddha, the founder of Buddhism, or, as is considered more probable, they are an early sect of seceders from that faith, * and probably owed part of their popularity, on the decline of the purer Buddhist doctrine, † to their readier admission of the worship of some of the favourite Hindu divinities into their system and their retention of caste.

The rock inscription at Sravana Belgola which describes the migration of a body of Jains from Ujjayani under the leadership of Bhadra Báhu in about the 4th century B. C., as previously referred to (p. 191), seems to record the period of their first introduction to Mysore. Of the history of their settlement in this country little is known, but the oldest authentic inscriptions ‡ of the south shew them to have long held an influential position in the early centuries of the Christian era, and all the earliest literature is Jain. Three Chera kings of Kongu in the first and second centuries had a Jain guru, and Jains were gurus to the same line of kings down to the 5th century. A Jain named Akalanka confuted the Buddhists at the court of Hemasitala in Kanchi in 788, and a century later, Amogha Varsha, king of Kanchi, had as his guru Jinasená-chárya, reputed as the author of the chief Jain puranas. The state of Humcha, Shimoga District, founded in the 7th or 8th century, was Jain, and continued so to the 11th. The Kalachurya kings of the 12th century were Jains, and the Hoysala Ballála kings to Vishnu Varddhana belonged to the same faith. The conversion of this monarch to the Vaishnava faith in 1117, and the establishment of the Lingayat form of Siva faith at Kalyana about 1160, put an end to Jain predominance in Mysore as a state religion, though the Vijayanagar kings extended a partial favour to it, especially in Canara and the west.

The principal seats of the Jain faith in this country now are—at Sravana Belgola in Hassan District, Maleyur in Mysore District, and

* It is said to have been now ascertained that they are the heretical Buddhists excommunicated at the first council. *Vams. Brah.* 12.

† The Hinayana or Little Vehicle was the Buddhist doctrine in its original form: the Mahayana or Great Vehicle, a later development, due to Nagarjuna, who appears to have lived between 14 B. C. and 28 A. D.

‡ Mercara plates, *Ind. Ant.* I, 363.

Humcha in Shimoga District. The first place is the residence of a *sannyási* who claims authority over the Jains throughout the south of India, and is I believe admitted to be their chief pontiff. The foundation of the religious establishment at this place is attributed to Chámunda Ráya, who repaired the ruined temples and performed the ceremony of anointing the colossal statue of Gomātesvara.* To provide for the maintenance and worship of the image he established a *maṭha* and other religious institutions, with liberal endowments, and appointed Siddhántáchárya as guru. The following are given as the names of the principal gurus :—

Siddhántáchárya	appointed by Chámunda Ráya	
Kundáchárya	„ „ Pándya Ráya about	522 A. D.
Siddhántáchárya	„ „ Vira Pándya Ráya	642
Amálakirti Achárya	„ „ Kuna Pándya Ráya	722
Somanandyáchárya	„ „ Vinayáditya Ballála	
Tridáma Vibudhanandyáchárya		
Prabháchandra Siddhántáchárya	„ „ Yereyanga	„
Gunachandráchárya	„ „ Ballála Ráya	
Subhachandráchárya	„ „ Bitti Deva	1114

From 1117 the gurus all bear the name of Chárúkírti Panditáchárya.

According to Wilson, Akalanka, the Jain who confuted the Buddhists at the court of Hemasitala and procured their expulsion from the south of India, was from Sravana Belgola, but a manuscript in my possession states that he was a *yati* of Maleyur, and that Bhattákalanka is the title of the line of *yatis* of that place.

The list of Humcha gurus obtained from the *matha* is of some interest, as several of the references serve to fix the chronology. The gurus were of the *Kundakundánvaya* and *Nandi sangha*. From Jayakirti Deva they were of the *Sarasvati gachcha*. The descent is traced in a general way from Bhadra Báhu the *sruta kevali*, through Visákha muni the *dasapúrvī*, his successor,† and through Umásvāti munisvara, author of the *Tatvārtha Sūtras*.

Siddhánti Kirti, guru to Jinadatta Ráya.	? about 730 A. D.
Sámanta Bhadra, author of <i>Devágama stotra</i> .	
Akalanka,	„ „ a <i>bhāshya</i> on the above.
Vidyánanda	„ „ on the <i>A'ptamimāmsa</i> .
also „	„ <i>Sloka vārttikāṅkara</i> .
Mánikya Nandi.	
Prabhachandra.	
Sukhi Sena,	author of <i>Nyáyakumudachandrodaya</i> and of a <i>nyāsa</i> on the <i>Sākatáyana sūtra</i> .

* *Ind. Ant.* II, 130.

† *ib.* III, 155.

Period A. D

Píjyapáda swami, author of <i>Jainendra</i> , of a <i>nyása</i> on Pánini called <i>Sabddavádra</i> , and of a <i>Vaidya sastra</i> .	
Varddhamána munindra, by the power of whose <i>mantra</i> Hoysala subdued the tiger.*	
His successors were gurus to the Hoysala Ballála kings.	980—1040
Vásupújya vrati, guru to Ballála Raya.	1040—1100
Sripála.	Subha-kirtti Deva.
Nemichandra.	Padmanandi.
Abhayachandra, guru to Charama Kesavárya.	Muni Mághanandi.
Jayakirtti Deva.	Simha-nandi.
Jinachandrárya.	Padmaprabha muni.
Indranandi.	Vásu-nandi.
Vasanta kirtti.	Meghachandra
Visála-kirtti.	Vira-nandi.
	Dhanunjaya.
Dharma bhúshana, guru to Deva Raya.	1401—1451
Vidyánanda, who debated before Deva Raya and Krishna Raya, and maintained the Jain faith at Bilgi and Kárkala. His sons were—	1451—1508
Simha-kirtti, who debated at the court of Muhammad Shah.	1463—1482
Sudarshana.	
Meru-nandi.	
Devendra-kirtti.	
Amara-kirtti.	
Visála kirtti, who debated before Sikandar and Virupáksha Raya.	1465—1479
Nemichandra, who debated at the court of Krishna Raya and Achyuta Raya.	1508—1542

The present guru is named Devendra Tirtha Bhattáraka.

There are two sects among the Jains, the Digambara, clad with space, that is naked ; and the Svetambara, clad in white. The yatis in Mysore belong to the former division, but cover themselves with a yellow robe, which they throw off only when taking food. The *yatis* form the religious order, the laity are called *srávakas*. Certain deified men, termed Tirthankaras, of whom there are 24 principal ones, are the chief objects of Jain reverence. Implicit belief in the doctrines and actions of these is obligatory on both yatis and *srávakas*. But the former are expected to follow a life of abstinence, taciturnity and continence ; whilst the latter add to their moral and religious code, the practical worship of the Tirthankaras and profound reverence for their more pious brethren. The moral code of the Jains is expressed in five *mahá-vratas* or great duties:—refraining from injury to life, truth, honesty, chastity, and freedom from worldly desire. There are four *dharmas* or merits—liberality, gentleness, piety and penance ; and three sorts of restraint—government of the mind, the tongue and the person. To these are superadded a num-

* For an explanation of this allusion see p. 213.

ber of minor instructions or prohibitions, sometimes of a beneficial and sometimes of a trivial or even ludicrous tendency.*

The ritual of the Jains is as simple as their moral code. The *yati* dispenses with acts of worship at his pleasure ; and the lay votary is only bound to visit daily a temple where some of the images of the Tirthankaras are erected, walk round it three times, make an obeisance to the images with an offering of some trifle, usually fruit or flowers, and pronounce a mantra or prayer.

Pársvanátha and Mahávira, the 23rd and 24th Tirthankaras,† appear to be historical persons, of whom the former, it has been supposed, was the real founder of Jainism, while the latter, whose country, descent, connections and life bear a close resemblance to that of Buddha (also called Mahávira and Jina, and the last of 24 Buddhas), and whose period also nearly corresponds with his, was its greatest apostle and propagator.

Párs'va or Párs'vanátha was of the race of Ikshváku, and the son of king An'va Sena by Vámá or Bámá Devi. He was born at Bhelupura in the suburbs of Benares, and married Prabhávatí, daughter of king Prasenajita. He adopted an ascetic life at the age of 30, and practised austerities for 80 days before arriving at perfect wisdom. Once whilst engaged in his devotions, his enemy Kama'ha caused a great rain to fall upon him. But the serpent Dharanidhara, or the Naga king Dharana, overshadowed his head with his hood outspread as a chhatra, whence the place was called Abichhatra.‡ After becoming an ascetic, he lived 70 years less 80 days, and at the age of 100 died, performing a fast,§ on the top of Samet S'ikhara. He wore one garment, and had under him a large number of male and female ascetics. His death occurred 250 years before that of the last Tirthankara.

* Such as to abstain at certain seasons from salt, flowers, green fruit and roots, honey, grapes and tobacco ; not to deal in soap, natron, iinigo and iron ; and never to eat in the dark lest a fly should be swallowed.

† The following is the list of the twenty four Tirthankaras :—

Name.	Sign.	Sásana Devi.	Name.	Sign.	Sásana Devi.
Rishabha or A'dinátha	Bull	Chakresvari	Vimalanatha	Boar	Viditá
Ajitanátha	Elephant	Ajita'balá	Anantanatha	Falcon	Ankus'á
S'ambh'va	Horse	Duritári	Dharmacatha	Thunderbolt	Kandarpá
Abhinandana	Monkey	Káliká	S'antinatha	Antelope	Nirváni
Sumati	Curlew	Mahákáli	Kunthunatha	Goat	Balá
Padmaprabha	Lotus	S'yáná	Aranatha	Nandyávarata	Dhárini
Supárs'va	Swastika	S'antá	Mallinatha	Water jar	Dharanapriya
Chandraprabha	Moon	Ibri'kuti	Muni Suvrata	Tortoise	Naradattá
Pushpadanta	Crocodile	Sutáraká	Niminatha	Blue waterlily	Gándhári
S'itala	S'rivaṭsa	As'oká	Neminatha	Conch	Ambiká
S'reyans'a	Rhinoceros	Mánavi	Pársvanátha	Cobra	Padmavati
Vásupújya	Buffalo	Chanda	Varddhamána or Mahávira	Lion	Siddhayika

‡ *Abi*, serpent ; *chhatra*, canopy or umbrella. § Cf. *Ind. Ant.* II, 322.

Varddhamāna or **Mahāvīra**, also of the race of **Ikshvāku**, was the son of **Siddhārtha**, prince of **Pavana**, by **Trisalā**, and was born at **Chitrakot** or **Kundagrama**. He married **Yasoda**, daughter of the prince **Samara Vira**, and had by her a daughter **Priyadarsana**, who became the wife of **Jamāli**, his nephew, one of his pupils and the founder of a schism. **Varddhamāna's** father and mother died when he was 28, and two years afterwards he devoted himself to austerities, which he continued twelve years and a half, nearly eleven of which were spent in fasts. As a **Digambara** 'he went robeless, and had no vessel but his hand.' At last the bonds of action were snapped like an old rope, and he attained to *Kevala* or the only knowledge, becoming an **Arhant** or **Jina**. Proceeding to **Papapuri** or **Apapapuri** in **Behar**, he commenced teaching his doctrines. Several eminent **Brahmans** of **Magadha** became converts and founded *ganas* or schools. The chief of them was **Indrabhūti** or **Gautama**. **Mahavira** continued to teach, chiefly at the cities of **Kausambi** and **Rajagriha**, under the kings **Sasanika** and **Srenika**, and died at the age of 72 at **Apapapuri**. The date of his death is the era from which Jain chronology reckons. The various accounts differ in placing it from 663 B. C. to 526 B. C.

Siva.—Though it is sought to identify **Siva** with **Rudra** of the **Vedas**, who is there introduced in a very subordinate position, it is doubtful whether there is any correspondence between them; and if the one was a later development out of the other, there is no trace whatever of the process by which **Siva** was raised to a supreme position as a chief member of the **Trimurti** or **Hindu trinity**. How again the *linga*, under which form he has for centuries been worshipped, came to be associated with **Siva** is unknown. The introduction of an entirely new divinity from the mountains of the north has been supposed, who was grafted in upon the ancient religion by being identified with **Rudra**; and it is not impossible that the *linga* may have been an object of veneration among the aboriginal or non **Aryan** Indians, and that it was subsequently adopted by the **Brahmans** from them and associated with the worship of **Rudra**.*

The legend regarding **Daksha's** sacrifice seems to bear out these views. The probable interpretation of it is that **Siva**—a deity according to **Gorresio** of **Cushite** or **Hamitic** tribes which preceded on the soil of **India** the **Aryan** or **Indo-Sanskrit** races—wished to have a part in the worship of the conquerors and in their sacrifices, from which he was exclud-

* It may be noticed that **Brahmans** do not officiate in **Siva** temples; these are served by an inferior order of priests called *Siva dvija*. A few exceptions, however, seem to exist in what are distinguished as **Vaidika Siva** temples, such as the famous one of **Viveśvara** at **Benares**.

ed ; and by disturbing their rites and by a display of violence at their sacrifices, he succeeded in being admitted to participate in them.

The worship of Siva succeeded Buddhism, but the period which intervened before the supremacy of Siva was generally accepted brought to the surface many Hindu gods as candidates for the popular favour. The records of Sankarácárya's polemical victories shew that in his time there prevailed, among others, the worship of Brahma, Agni, Surya, and Ganesa. None of these have now distinct classes of worshippers, but Ganesa shares a sort of homage with almost all the other divinities. There were also sects devoted to the exclusive worship of the female deities Bhaváni, Lakshmi, Sarasvati ; and also of Bhairava.

The account of Gritsamada in the Ganesa purana is supposed to contain an allusion to the period of transition.

A king named Rukmánga one day lost his way in the woods while hunting, and came to the hermitage of a rishi, whose wife fell in love with him ; when he refused her solicitations, she cursed him, and he was attacked with leprosy, which was eventually cured through the favour of Ganesa. But Indra, it is stated, assuming the form of the king, gratified her desires, and the fruit of the connection was the sage Gritsamada, the author of certain hymns of the Rig-veda. He was not aware of his origin until attending once at a ceremony with the intention of taking part in it, the Brahmans present reproached him as of spurious descent, called him the son of Rukmánga, and ordered him to quit the assembly. Stung to the quick, he went to his mother, and on her acknowledging her guilt he cursed her to become a jujube tree, *badari*, and she retorted that he should be a Brahma Rákshasa.

He now joined himself to certain munis of a different persuasion, and thence before long devoted himself to meditation on the Supreme Being, standing on his great toe with his mind intensely fixed on the deity. At length Ganesa appeared to him and granted certain boons. He thus became an object of reverence and even worship to the other sages. Gritsamada continued thus in meditation, when one day on opening his eyes a beautiful boy came up to him, who prayed to be adopted as his. Gritsamada complied with his request, taught him the mystic incantation OM, and sent him away to stand on his great toe contemplating the supreme Ganesa. The deity after a long interval appeared and desired him to ask a boon. He accordingly requested the power of conquering the three worlds, which was granted, together with immunity from any weapon except that of Siva ; and it was added that he should possess three famous cities, one of iron, one of silver, and one of gold, and that on leaving the world he should be absorbed into the divine essence.

This wonderful child was no other than the famous Tripurásura. He vanquished Indra and all the gods, and reduced them to the greatest state of leanness and distress by putting a stop to the offering up of the oblations which mortals had been accustomed to present to them. He took possession of the abodes of Brahma, Vishnu and Siva, while Ganesa in disguise built for him the three famous cities, one of iron, one of silver, and one of gold. Siva now did penance to Ganesa, who at length appeared and granted him the boon of victory over their enemy. The gods, led by Siva, overcame Tripurásura and consumed with fiery darts the three cities.

Now this account evidently indicates a period when the religious system of the Brahmans was superseded by another, which Gritsamada partly learned from sages of a different persuasion after he had been expelled from the society of the Brahmans, and which he taught to Tripurāsura, who thereby gained the supremacy over heaven and earth, and thrust down from heaven all the Brahmanical deities. This system consisted of spiritual and mystical contemplation of the Supreme Being, which, with other features, corresponds so well with the main characteristics of Buddhism that we seem here to have an allegory of the ascendancy of that faith and its overthrow by the revival of the worship of Siva.*

It has been noticed here on account of its apparent localisation in certain parts of Mysore, and affording, if it has been rightly interpreted, a slight evidence of the spread of Buddhism in this country. Thus Rukmānga, it will be seen from the account of the Kadur District, is claimed to have been the king of Sakráyapatna. The *yagache*, or in Sanskrit *badari*, is the name of the neighbouring stream, which flows from the Baba Budan mountains past Belur to the Hemavati, and which is so called from its source at the jujube tree, into which form Gritsamada doomed his mother to pass. Tripura and Tripurásura we have more than once had occasion to refer to. From the drops of sweat which fell from Siva after his contest with Tripurásura are fabled to have sprung the Kadamba line of kings. And the introduction of Brahmans into the north-west of Mysore by Mayura Varma of that line was no doubt one of the earliest results of a declension of Buddhist influence.

Sankaráchárya.—A prime agent in bringing about the establishment of Siva worship was Sankaráchárya, the founder of the Smárta sect.

He was born apparently either in 677 or 737 A. D., and is most generally acknowledged to have been a Brahman of Cranganore in Malabar, though some

* J. E. A. S., VIII.

traditions state that he was born at Chidambaram. There seems to have been something irregular in his birth. He was consecrated as a sannyási at the age of 8 years by Govinda yogi, and his life was spent in controversy with the professors of various religious sects, whom he successfully refuted, as recorded in the *Sankara Vijaya* and several other similar extant works. In the course of his wanderings he visited the greater part of India, and eventually went as far as mount Kailasa. He set up a linga at Kedara and returned by way of Ayodhya, Gaya and Jagannath to Sri Saila, where he encountered Bhattacharya, who had ground the Bauddhas and Jainas in oil mills. The latter declined to argue, but referred him to Mandana misra, married to his younger sister, who was an incarnation of Sarasvati. Thither Sankarachari repaired, and though successful in defeating the husband, was overcome in an argument on sensual pleasures with the wife, who proved more than equal to him in discussions of this nature. He thereupon went to Amritapura, and animated the dead body of its prince named Amaru, in whose form he gained familiarity with the subject by practice in the gratification of the passions, and then returning was victorious over her. The throne of Sarasvati on which he then sat is still shewn in Kashmir. Consecrating Mandana misra as a sannyasi under the name of Suresvaracharya, he bound Sarasvati or S'arad-amma* with spells and conveyed her to Sringa-giri (Sringeri), where he established her throne. There he remained, and ended his days 12 years afterwards, at the age of 40.†

But his influence was perpetuated in his writings. He is the most celebrated of all commentators, and his works are almost countless, including commentaries on the Upanishads, Vedānta sutras and Bhagavad Gita. The sect of Vedantists founded by him has always held the highest reputation for learning, and is distinguished for the cultivation of the study of Sanskrit and especially of the vedic literature. It is also the most unsectarian, admitting in fact all other objects of worship as but manifestations of Siva or Mahadeva, the Great God.

The Vedantist system advocated by Sankara is pantheistic, and based on the doctrine of *a vaita* or non dualism, which means that the universe is not distinct from the Supreme Soul. The leading tenet of the sect is the recognition of Brahma Para Brahma as the only really existing Being, the sole cause and supreme ruler of the universe, and as distinct from Siva, Vishnu, Brahma or any individual member of the pantheon: to know

* Kashmir is sometimes called S'aradā-kesa, and its ancient manuscripts are written in S'aradā characters. *Ind. Ant.* V, 28.

† Wilson makes him die at Kedarnath in the Himalayas at the early age of 32. (*Wks.* I, 200). But it will be seen that 32 years was the period from his consecration to his death. The succession of gurus at Sringeri is traced from him directly, and a small temple is there shewn as the place where he disappeared from life. It contains a statue of him, seated after the manner of Buddhist and Jain images.

Him is the supreme good. The attainment of complete wisdom results in *mukti* or liberation, and re-union with the divine essence. But as the mind of man cannot elevate itself to the contemplation of the inscrutable First Cause and Only Soul, he may be contemplated through inferior deities and sought through the prescribed rites and exercises. This creed thus tolerates all the Hindu deities, and the worship of the following was, by Sankrachari's express permission, taught by some of his disciples:—that of Siva, Vishnu, Krishna, Surya, Sakti, Ganesa and Bhairava.

‘Individual souls emanating from the supreme one are likened to innumerable sparks issuing from a blazing fire. From him they proceed, and to him they return, being of the same essence. The soul which governs the body together with its organs, neither is born nor does it die. It is a portion of the divine substance, and as such infinite, immortal, intelligent, sentient, true. It is governed by the Supreme. Its activity is not of its essence, but inductive through its organs: as an artisan taking his tools labours and undergoes toil and pain, but laying them aside reposes, so is the soul active and a sufferer by means of its organs, but divested of them and returning to the supreme one is at rest and is happy. It is not a free and independent agent, but made to act by the supreme one, who causes it to do in one state as it had purposed in a former condition. According to its predisposition for good or evil, for enjoined or forbidden deeds, it is made to do good or ill, and thus has its retribution for previous works.’

The Sringeri swámi or head of the maṭha or monastery at Sringeri, the principal one established by Sankaráchárya, is styled the Jagat Guru or Jagad Guru, the priest of the world, and is possessed of extensive authority and influence. The maṭha is situated on the left bank of the Tunga, in the centre of a fertile tract, with which it was endowed about 400 years ago by the Vijayanagar kings. The estate yields a revenue of Rs. 50,000 a year, and a further sum of Rs. 10,000 a year is received from the Raja. But the expenses connected with the feeding of Brahmans, and the distribution of food and clothing on festival days to all comers of both sexes, exceed the income, and the Guru is constantly engaged in long and protracted tours through various parts for the purpose of receiving contributions from his disciples. He wears a tiara like the Pope's, covered with pearls and jewels, said to have been given to him by the Peshwa of Poona, and a handsome necklace of pearls. His sandals are covered with silver. He is an ascetic and a celibate, and in diet is very

abstemious, living principally, it is said, on milk seasoned with a little pepper. He is borne along in an *aḍḍa pālki* or palanquin carried cross ways, which prevents any thing else passing. He is attended by an elephant and a small escort of native cavalry, and accompanied by a numerous body of Brahmans and disciples.

The following is the succession of Sringeri gurus, obtained from the maṭha :—

		<i>Consecrated.</i>	<i>Died.</i>
Sankarāchārya (born A. D. 677 or 737)	...	685 or 745	709 or 769
Suresvarāchārya	...	693 or 753	773 *
Nityabhoḡānāchārya	...	758	848
Jñānabhānāchārya	...	846	910
Jñānottamasāchārya	...	905	953
Jñānagiriāchārya	...	949	1038
Simhagirisvarāchārya	...	1036	1098
Iśvaratīrthāchārya	...	1097	1146
Narasimha muni or murthi	...	1145	1228
Vidyasākhāraswami	...	1228	1333
§ Bhārati Kṛishna tīrtha	...	1328	1380
¶ Vidyāranya...	...	1331	1386
Chandrasekhara Bhārati	...	1368	1389
Narasimha Bhārati	...	1387	1403
Bhaktasankara Purushottama Bhārati	...	1406	1448
Sankarānanda Bhārati	...	1428	1454
Chandrasekhara Bhārati	...	1449	1464
Narasimha Bhārati	...	1464	1479
Purushottama Bhārati	...	1472	1517
Rāmachandra Bhārati	...	1508	1560
Narasimha Bhārati	...	1557	1573
Narasimha Bhārati	...	1563	1576
Imnadi Narasimha Bhārati	...	1576	1599
Abhinava Narasimha Bhārati	...	1599	1622
Sachchidananda Bhārati	...	1622	1663
Narasimha Bhārati	...	1663	1705
Sachchidananda Bhārati	...	1705	1741
Abhinava Sachchidananda Bhārati	...	1741	1767
Nṛsiṃha Bhārati	...	1767	1770
Sachchidananda Bhārati	...	1770	1814
Abhinava Sachchidananda Bhārati	...	1814	1817
Narasimha Bhārati (the present guru)	...	1817 (still living,	
Sachchidananda Sivābhinava Narasimha Bhārati	...	1867 1876)	
(the chikha swami, or guru elect)			

Rāmānujāchāri.—The next great religious movement took place at the beginning of the 12th century, and is identified with Rāmānujāchāri. He was born at Sri Perमतुर near Madras, and studied at Conjeveram. He then retired to the island of Sri Ranga (Seringam) at the parting of the Kaveri and Coleroon, and there perfected his system and composed his religious works. He then travelled over great part of southern India,

* This date is plainly given in the annals, according to the Salivahana saka. But the preceding dates are absurdly referred to the Vikrama saka, in the 14th year of which Sankaracharya is said to have been born; and to connect the two eras, Suresvaracharya is gravely asserted to have held his authority 800 years, although only 32 years are granted to Sankaracharya. Accepting the succession as correct, I have taken the names of the years, and calculated the preceding dates accordingly. But they will equally correspond whether Sankarachari's successor is granted 20 or 80 years from his consecration to his death. The former is perhaps more probable, considering that he was a married man and of established reputation as a religious teacher when Sankaracharya first came into contact with him. On the other hand, 80 years may be the correct figure, by the simple addition of a cipher to which, the 800 was obtained.

defending and expounding the Vaishnava creed. He established several maths, the principal one being at Ahobala. He also converted or restored many Saiva temples to the worship of Vishnu, among others the celebrated temple of Tirupati. The Chola king, Kerikala Chola, in whose dominion Sri Ranga was situated, was an uncompromising Saiva, and on Ramanujachari's return thither after these religious successes, he was required in common with all the Brahmans to subscribe to a declaration of faith in Siva. To escape persecution he fled to the Ballala kingdom in Mysore. Here he converted from the Jain faith the king thenceforward known as Vishnu Varddhana, the date assigned to this event being 1117. Having put down the Jains by the severest measures, he settled under the royal favour and protection at Melukote, and there established his throne, which is still occupied by the guru known as the Parakálaswami. After twelve years, on the death of the Chola king, he returned to Sri Ranga and there ended his days.

The chief religious tenet of the sect of Rámánujas or Sri Vaishnavas founded by him is the assertion that Vishnu is Brahma, that he was before all worlds, and was the cause and creator of all. Although they maintain that Vishnu and the universe are one, yet in opposition to the vedanta doctrines they deny that the deity is void of form or quality, and regard him as endowed with all good qualities and with a two-fold form,—the supreme spirit, Paramátma or cause, and the gross one, the effect, the universe or matter. The doctrine is hence called the *visishṭhādvaita*, or doctrine of unity with attributes.

Besides his primary and secondary form as the creator and creation, the deity has assumed at different times particular forms and appearances for the benefit of his creatures, hence the avatáras, &c.* The prescribed acts of adoration are the cleaning and purifying of temples and images, presentation of flowers and perfumes, repeating the divine

* Mr. Fergusson speculates as follows:—Recent discoveries in Assyria seem to point to that country as the origin of much that we find underlying the local colouring of the Vaishnava faith. Garuda, the eagle-headed vahana and companion of Vishnu, seems identical with the figure now so familiar to us in Assyrian sculpture, probably representing Ormazd. The fish-god of the Assyrians, Dagon, prefigures the fish avatar of Vishnu. The man-lion (nara-simha) is not more familiar to us in Assyria than in India, and tradition generally points to the West for the other figures scarcely so easily recognized, more especially Bali, whose name alone is an index to his origin; and Mahishāsura, who by a singular inversion is a man with a bull's head instead of a bull with a man's head, as he is always figured in his native land. It is worthy of remark that the ninth avatar of Vishnu is always Buddha himself, thus pointing to a connexion between these two extremes of Indian faith, and we are told by inscriptions of the 14th century that there was then no appreciable difference between the Jains and Vaishnavas. Indeed it seems impossible to avoid considering these three faiths as three stages of one supersession of a native race, Buddhism being the eldest and purest; Jainism a faith of similar origin, but overlaid with local superstition; and Vishnuism a third form, suited to the capacity of the natives of India in modern times, and to compete with the fashionable worship of Siva. *Ind. Arch.*, 324.

names, and effort to unite with the deity. The reward of these acts is elevation to the heaven of Vishnu, for perpetual residence there in a condition of pure ecstasy and eternal rapture.

Harihara.—The form Harihara, a combination of Hari or Vishnu and Hara or Siva, is declared in inscriptions to have been revealed at Kúḍalúr,* for the destruction of a giant named Guhásura, who opposed the vedas; and also to establish the *veda váṁśa*, or sayings of the veda, regarding the *advaita*, the non-duality or unity, of Vishnu and Siva. A similar form seems to be worshipped in Canara under the denomination of Shankara Náráyana. The terms are evidently indicative of toleration or compromise, but the history of this manifestation has not been sufficiently investigated. In Mysore the worship of Harihara is almost, if not entirely, confined to the town on the Tungabhadra bearing the same name.† The existing temple was built in 1223, by Polálva, the general of the Ballála king Vira Narasimha II.

Lingáyats.—About 1160, little more than 40 years after the establishment of the Vaishnava faith in Mysore by Ramanujachari, arose the well known sect of Siva worshippers called Lingayats, chiefly composed of the Kannaḍa and Telugu speaking races.

Basava, the founder of the sect, whose name literally means bull, was in fact regarded as the incarnation of Nandi, the bull of Siva. His political career has been sketched in connection with the history of the Kalachuryas. He was the son of an Arádhya Brahman, a native of Bagwadi in Belgaum. According to the legends, he refused to wear the brahmanical thread because its investiture required the adoration of the sun, and repaired to Kalyána, the capital of Bijjala, where he became, as elsewhere related, the prime minister, and where he founded the new sect.

Its distinctive mark was the wearing on the person of a *jangama lingam* or portable linga. It is a small black stone, about the size of an acorn, and is enshrined in a silver box of peculiar shape, which is worn suspended from the neck or tied round the arm. The followers of Basava are properly called Lingavantas, but Lingáyats has become a well known designation, though not used by themselves; the name Siva-bhakta or Siváchár being one they generally assume.

Basava rejected the authority of the Vedas and the Brahmans, together with the observances of caste, pilgrimage and penance. These

* That is, apparently, at the junction of the Haridra and Tungabhadra.

† Converted into Hurryhur, Harry Heir and other ludicrous forms in the military histories.

continue to be fundamental distinctions of the sect. He declared that all holiness consisted in due regard for three things—guru, linga, and jangam—the guide, the image and the fellow-religionist. The guide or confessor may be any man or woman who is in the creed; who whispers the sacred mantram in the ear of the jangam or worshipper: and hangs the image on the neck or binds it on the arm. A guru is forbidden to eat flesh, to chew betel or touch liquor, and wears a *kempu kávi vastra* or garment dyed with red ochre. Those who adopt the extreme views of this sect are termed Vira Saivas, ultra or warrior followers of the Saiva system, a term which indicates their polemical zeal.

The sacred books of the sect are the Basava Purana and Channa Basava Purana, written in Hale Kannada, but not of the oldest form. They consist of tales and miraculous stories regarding their gurus and saints, and of this nature is nearly all their literature, whose character is more popular than learned. The Lingayat faith soon spread through the north-west of Mysore, and, according to tradition, within 60 years of Basava's death, or 1168—1223, it was embraced from Ulavi near Goa to Sholapur, and from Balehalli or Bálehonnur to Siva ganga. It was the state religion of the Wodeyars of Mysore from 1399 to 1610, and of the Náyaks of Keladi, Ikkeri, or Bednur from 1550 to 1763.

Mādhvāchārya, the founder of the sect of Mādhva Brahmans, is the representative of another religious movement, the result of which was to effect a certain compromise between the worship of Vishnu and Siva, though maintaining the supremacy of the first.

Madhvacharya, represented as an incarnation of Váyu, the god of the air, was by birth probably a Saiva Brahman. He was born in Tuluva or S. Canara in A. D. 1199, and was educated at Anantesvara, where he was initiated into the Saiva faith. But he subsequently became a convert to the Vaishnava faith, and set up three sálagráms at Uḍipi, Madhyatala and Subrahmanya. He also set up an image of Krishna at Uḍipi, which has since continued to be the chief seat of the sect. He resided there for many years and composed a number of works. At length he went on a controversial tour, in which he triumphed over various teachers, and finally in his 79th year departed to Badarikasrama. He established eight temples of Vishnu under different forms, all in Tulava, under as many sannyásis, each of whom in turn officiates as superior of the chief station at Uḍipi for two years. Other maṭhas were established above the Ghats, those in Mysore being at Sosile and Hole Narsipur.

The creed of the Mādhvas is *dvaita* or duality, that is, they regard *jívútma* or the principle of life as distinct from *Paramátma* or the Su-

preme Being. Life is one and eternal, dependent upon the Supreme and indissolubly connected with, but not the same with him. Hence they reject the doctrine of *mōksha* in the sense of absorption into the universal spirit and loss of independent existence after death.

The religious observances of the Mādhyas consist in three methods of devotion to Vishnu, namely, *ankana*, *nāmakarana* and *bhājana*: or marking the body with his symbols, especially with a hot iron; giving his names to children, and other objects of interest; and the practice of virtue in word, act and thought. Truth, good council, mild speaking, and study belong to the first; liberality, kindness and protection to the second; and clemency, freedom from envy, and faith to the last. These ten duties form their moral code.

Sātānis.—The caste system and supremacy of the Brahmans had been rejected by Basava and the Lingāyats for the Saivas. A similar movement was later inaugurated for the Vaishnavas, giving rise in the north to widely popular sects, and in the south to the Sātānis.

Rāmānand, a disciple descended from Rāmānuja, about the end of the 14th century, after travelling through various parts of India, was on his return to his matha denied the privilege of eating with the other disciples, on the ground that he had not observed the privacy in his meals which is a vital observance with the Rāmānujas or Sri Vaishnavas. He was highly incensed, and proceeding to Benares, established a sect of his own, to whom he gave the name of *Avadhūta* or liberated, as holding that all personal distinctions of rank or caste were merged in the holy character. He had twelve disciples, of whom the most famous was Kabir, the weaver, the popular reformer of Bengal.

In the same sect arose Chaitanya. He was born at Nadiya in 1485, and was the son of a Brahman from Sylhet, but is represented as an incarnation of Krishna. At the age of 24 he abandoned his family and domestic life, and began his career as a religious devotee and teacher. For six years he travelled between Mathura and Jagannāth, teaching his doctrines and acquiring followers, and finally settled at Nilāchala or Cuttack, where he remained 18 years, engaging deeply in the worship of Jagannath, to whose festival at Puri he seems to have communicated great energy and repute. Later, his intent meditation on Krishna seems to have brought on mental derangement. He became subject to visions and dreams, and died in 1534, at the age of 48.

The Sātānis derive their name either direct from him, or from Sātānana, one of his chief disciples. The whole religious and moral code of the sect is comprised in one word—*bhakti*,—a term that signifies a union of implicit faith with incessant devotion, and which consists in the

momentary repetition of any name of Krishna (*nāma kīrtana*), under a firm belief that such a practice is sufficient for salvation. The principle of devotion is exemplified and illustrated by the mutual loves of Rādhā and Krishna.

The most popular religious observances connected with the Brahmanical deities at the present time, seem to be pilgrimages, and the celebration of the annual car festivals, which are not however frequented to the same extent as formerly. The maintenance of these gatherings is no doubt greatly due to the combination of business with religion. Traders from all parts eagerly carry their goods to a scene where they are likely to meet with thousands of customers, and the rural population are glad of the chance of purchasing wares which they cannot so easily meet with at other times. Hence, apart from the religious merit to be acquired, these occasions, which generally fall in the season when there is no work in the fields, afford a pleasant excitement to all.

For certain of the great temples there are touts sent all over the country by the managers, to announce the dates of the feasts and to secure pilgrims. The shrine of Tirupati in North Arcot is one of the most celebrated, and is now easily reached by rail. The Subrahmanya festival and that of Chunchankatte are also very popular, as well as those accompanied with cattle fairs at Nandi and Avani. The Navarātri is the chief festival at Sringeri, the Vaira Muḍi at Melukote, the Tippa Rudra at Nayakanhatti : a list is given with each District in Vol. II of the principal *jātres*, *parishes* and *rathōtsavas*.

The Hindu festivals most generally observed by all sects are the Holi and the Dasara, which respectively mark the seasons of the vernal and autumnal equinox ; the Pongal, at the time of the winter solstice ; the Dīpāvali, or feast of lights ; and the Yugādi or new year's day. The Sivarātri, or watch-night of fasting, is kept by all the adherents of Siva.*

Islam.—The commercial intercourse which existed from the remotest times between the western coast and Arabia doubtless led to a spread of Muhammadan influence into the neighbouring countries, but the first appearance of Musalmans by land south of the Vindhya mountains was in 1294, in the invasion of Ala-ud-Din, who captured Devagiri. Their introduction into Mysore was probably in 1310, when Dorasamudra, the

* The religious endowments are noticed elsewhere.

capital of the Ballála kingdom, was taken by the Muhammadan general Malik Káfur. There is a story that the Sultan's daughter fell in love with the Ballála king from the reports of his valour, and threatened to destroy herself unless married to him. Eventually his sword was sent as his representative, with a due escort, and to that the princess was formally wedded, and then joined the king. They lived happily for ten years, after which he was induced, by the consideration that he was a Rajput and she of inferior caste, to put her away, which provoked, it is said, the second invasion of 1326. Under the Vijayanagar empire, the continued rivalry and struggles between that power and the Bahmani and Bijapur Pathan kingdoms gave occasion for the further introduction of Islam into Mysore. But it was in 1406, in the reign of Deva Raya, who, as elsewhere related, gave his daughter in marriage to Firoz Shah, that Musalmans were first enlisted into the Vijayanagar army. The Raja built them a mosque, and had the Koran placed before his throne in order to receive their obeisance, which they refused to make to him as an idolater, but willingly made to their sacred book. Subsequently, about 1560, a Musalman force from Bijapur assisted the usurper Tirumal Rao, and a little later the Vijayanagar army helped Bijapur against Ahmadnagar.

The permanent settlement of Musalmans in Mysore may be assigned with certainty to the time, first, of the Bijapur conquest under Ran-dulha Khan in 1637, and second, to the Mogul conquest under Khasim Khan in 1687 and the formation of the Province of Sira. By settlement, conquest, and conversions there were considerable numbers of Muhammadans employed in the military and other services in the territories of Mysore, Bednur, Chitaldroog and other provinces at the time of Haidar Ali's usurpation in 1761. A Nevayet commanded the forces of Bednur in the decisive battle of Mayakonda in 1748, when Madakeri Nayak fell, and Chanda Sahib, whose cause he had espoused, was taken prisoner, his son being also slain. Under Haidar Ali there was doubtless a considerable accession to the Musalman ranks, by forcible conversion of captives in war and other means; but the dark and intolerant zeal of Tippu Sultan made the cause of Islam a pretext for the most terrible persecutions and degradation, with the avowed object of extinguishing every other form of belief. The last chapter shews the present numbers of the Muhammadan subjects of Mysore, with other particulars regarding them.

It is unnecessary in this work to give an account of the life of Muhammad, or of the tenets and propagation of the religion established by the Arabian prophet in the 7th century. They are contained in every general history. The following religious observances are reckoned fundamental :—faith in God and the Divine mission of Muhammad ; prayer and ablutions ; almsgiving ; fasting ; pilgrimage to Mecca. The *kalma* or creed sums up the belief in one sentence —‘ There is only one God, and Muhammad is God’s prophet.’ Four revelations are acknowledged, namely, those given to Moses, to David, to Jesus, and to Muhammad, but the last is final and implicitly to be believed under the severest penalties. Prayer is enjoined daily, at five stated times. The chief season of fasting is the month of Ramzán, when thirty days of abstinence are observed. The Mobarram, properly a season of lamentation, is generally kept here as a festival. The principal other public feasts are the Bakr-íd and Shube-barát.

Christianity.—Christianity was introduced into the south of India, on the Malabar coast, in the first century, probably by St. Thomas the Apostle.* The tradition is that he suffered martyrdom at St. Thomé or Mailapur near Madras. Whatever amount of truth there may be in that account, his visit to this country seems borne out by the following evidence, namely by the *Acta Thomæ*, a work which is attributed by Dr. Haug to the end of the 2nd century and is mentioned by Epiphanius, Bishop of Salamis in 368 ; by the *Teaching of the Apostles*, a Syriac document older than the Nicene Council of 325 ; and by the connection which was kept up between the early Christians of Malabar and the church of Edessa in Persia, of which St. Thomas is said to have been the first apostolic overseer and director. Alfred the Great of England sent ambassadors with presents to the shrine of St. Thomas in India in the 9th century.

The existence of the early Christian communities of the western coast rests upon trustworthy evidence. Passing over the statement by Eusebius and Jerome that Pantænus visited India in the 2nd century and found there a Christian community who possessed the Gospel of St. Matthew in Hebrew, Cosmas Indicopleustes informs us that there was a Christian bishop in the 6th century at Kalyana near Udupi ; and

*The substance of these statements is taken from papers by Dr. Burnell and the Revd. R. Collins, *Ind. Ant.* III and IV,

it is known from existing grants that in their first colony at Cranganore the Christians were privileged before the 9th century to elect their own chief, but acknowledged the supremacy of the Cochin Raja. A further proof of the settlement of Christians is found in the Pahlavi inscriptions, probably of the 7th or 8th century, which have been found at the Mount near Madras, and at Kottayam in Travancore.* These communities still exist, and are known as Nestorians.

The close connection of the greater part of Mysore with Malabar and the west coast, affords ground for supposing that Christian influences may even at that early period have been extended to this country. But coming down to a later period, the intimate relations which existed between the Bijapur state and the Portuguese settlements at Goa are well known, and it is from the capture of Goa by Albuquerque in 1508, and the establishment there not long after of the Inquisition, that the foundation of the Roman Catholic church in Southern India dates. There is a statement that a Christian was diván at Vijayanagar in 1445, and through the Bijapur conquest of the north and east of Mysore some Christian influence must have found its way hither, especially in connection with the labours of Francis Xavier, the zealous disciple of Ignatius Loyola, though whether either he or John de Britto visited Mysore is uncertain.

The oldest Christian mission to Mysore was the Roman Catholic, in the middle of the 17th century. Little is known of its origin, except that the priests by whom the Canarese mission was founded came from Coimbatore (where a mission had been established by a Jesuit), through the wild tracts of jungle on the borders of the Kávéri, and established congregations, the descendants of whom are still to be found, in a few villages in the south east. On one spot is pointed out a ruined chapel marked by four large stones, on which are inscriptions, dated 1704, authenticating the gift of the land to 'the Sanyásis of Rome.'

Before the time of Haider a church was built in Seringapatam for a Canarese congregation, and another at Kankanahalli, the site of which

* It is remarkable that the localities above mentioned should have been those which gave birth to the great Hindu religious reformers, for Sankaracharya was born near Cranganore, Ramanujachari near Madras, and Maithvacharya near Udipi. It seems probable, therefore, in the absence of any other testimony, that much of the philosophy of the modern Vedanta sects of Southern India comes from some form of Christianity derived from the Persians. Dr. Burnell, who has made these suggestions, adds,—'Patriotic Hindus will hardly like the notion that their greatest modern philosophers have borrowed from Christianity; but as they cannot give an historical or credible account of the origin of these Vedantist sects, there is more than a strong presumption in its favour, for these doctrines were certainly unknown to India in Vedic or Buddhistic times.'

is known, though there are now no Christians there. Among others, established in the west, was one at Heggadadevankote, of which tradition relates that the priest who built the chapel was beaten to death by the natives. In the east, a Telugu mission was established in 1702, by two French Jesuits, named Boucher and Manduit, from Vellore, who built chapels at Bangalore, Devanhalli, Chik Ballapur and other places. The progress of the missions received severe checks from the suppression of the Jesuits, which stopped the supply of missionaries; and from the fanatical persecution of Tippu, who was determined if possible to extirpate Christianity from his dominions. By his orders almost all the churches and chapels were razed to the ground, with two remarkable exceptions,—one a small chapel at Grama near Hassan, which was preserved by a Muhammadan officer, and the other, that in the Fort of Seringapatam, which was protected by the Native Christian troops under their commander Surappa.

On the fall of Seringapatam, the Abbé Dubois, then in the south, was invited to Seringapatam by the Catholic congregation there. This remarkable man had escaped from one of the fusillades of the French Revolution and sought refuge in India. On entering on mission work he resolved to follow the example illustriously set by de Nobili and Beschi, of adopting the native costume and accommodating himself to the customs and mode of life of the country.

‘During the long period’ he states ‘that I remained amongst the natives, I made it my constant rule to live as they did, conforming exactly in all things to their manners, to their style of living and clothing, and even to most of their prejudices. In this way I became quite familiar with the various tribes that compose the Indian nation, and acquired the confidence of those whose aid was most necessary for the purpose of my work.’ The influence he thus acquired is testified to by Colonel Wilks, who says—‘Of the respect which his irreproachable conduct inspires, it may be sufficient to state that, when travelling, on his approach to a village, the house of a Brahman is uniformly cleared for his reception, without interference and generally without communication to the officers of Government, as a spontaneous mark of deference and respect.’

He was the founder of the church at Mysore, and of the Christian agricultural community of Sathalli near Hassan, and laboured in the Mysore for 22 years.* He wrote a well known work on *the People of India*,

* On his return to France he became the head of the Missions Etrangères in Paris, and died universally respected in 1853.

the manuscript of which was purchased by the British Government. He is also said to have introduced vaccination into the Province.*

Till 1848 there were only 2 priests for the whole of Mysore, one at Bangalore and one at Seringapatam. Mysore, with Coorg and Wainad, now form a Vicariate Apostolic, with head quarters at Bangalore. There are 45 churches and 26 chapels in the Vicariate, presided over by 22 European and 7 Native priests, all subject to the Vicar Apostolic. An order of monks called the Brothers of St. Joseph has for its principal object the keeping of schools. They have 8 English and 18 vernacular schools, of which the seminary and college at Bangalore are the most important. Nuns of the order of the Good Shepherd have a convent at Bangalore, with schools for European and native girls, and a Magdalen asylum. Nuns of the order of St. Ann at Bangalore, and of the order of Our Lady of Mercy at Sathalli, are devoted to the work of female instruction among the natives. Orphanages male and female, a temperance hall, and a printing press are other valuable adjuncts of the Mission, and especially a medical dispensary at Sathalli. The Catholic population is set down at 25,075.

London Mission.—The first Protestant mission to the Canarese people seems to have been established at Bellary, by the London Missionary Society. Thence, in 1820, operations were commenced in Bangalore by the Revds. Laidler and Forbes, and in 1839 extended to Mysore; but in 1850 the latter station was given up. From the commencement, the efforts of the Mission have been devoted to public preaching in Bangalore and the surrounding country, and to literary and educational work. The

* The death of Chama Raja from small-pox had directed special attention to the recent wonderful discovery of Jenner, and the *Asiatic Annual Register* contains the following interesting extract on the subject from the proceedings of the Madras Government in June 1809.

His Lordship in Council being impressed with confidence, that the example of a government which is administered on principles so enlightened as those of the government of Mysore, will not fail to have a salutary influence on the minds of the natives of this country, it is deemed proper that the event which has been announced, should be made generally known; and his lordship has been accordingly, under that impression, induced to publish the following extract of a letter from the Dewan of Mysore, stating the circumstances which have attended it.

Extract of a letter from the Dewan of Mysore, dated 10th of May.

"The Ranee having determined to celebrate the nuptials of the Maha Raja, deferred the ceremony merely because the young bride had never had the small pox.—I communicated the cause of the delay to Major Wilks, who recommended an operation invented by some skilful physician of England, and lately introduced into his country, which alleviates the violence of this pernicious disease.—The operation was accordingly performed by the Resident's surgeon, and in consequence six mild pustules appeared on the young bride, who soon after recovered.—The Ranee expressed her extreme astonishment at a remedy so easy, and surprizing, for a malady so deleterious; a remedy which, until now, was unknown in these regions.—She was made very happy thereby, and determined that the nuptials should be celebrated within the year."

His Lordship in Council trusts that the publication of the preceding extract will evince the continued desire with which this government is actuated in the encouragement of the vaccine practice; and above all, that it will hold forth to all persons in India an interesting and illustrious example, of the safety with which that practice may be extended.

valuable Dictionaries—Carnataka-English, and English-Carnataka,—the only works of the kind in existence, were the production of the Revd. W. Reeve of this Mission. And the same gentleman, in conjunction with the Revds. J. Hands and W. Campbell, were the translators of the earliest version of the Canarese Bible, for the printing of which Canarese type was first cast, under the direction of Mr. Hands. A new translation, the one now in use, was subsequently made, in which the Revds. B. Rice and C. Campbell had a large share. Native female education is especially indebted to the ladies of this Mission, who opened the first Canarese girls' schools in 1840.

The agency now includes three European missionaries and two Native ministers, with eight evangelists and catechists, and fifty school teachers. Of the Native ministers, one is in charge of the Canarese church formed in the Bangalore Petta, and the other of the Tamil church in the Cantonment. There are two outstations at Malur and Anekal. The number of baptized Native Christians connected with the Mission is 375. There are besides, 1,288 children under instruction in the Mission schools, of whom 775 are boys and 513 girls. Of the boys, 585 belong to the English institution (established in 1847 in Bangalore) and its branches, educating up to the standard of matriculation at the Madras University.

The *Wesleyan Mission* commenced its work in the Mysore country in 1822, but for many years the missionaries laboured only among the Tamil people of the Cantonment of Bangalore. The Canarese Mission was begun in Bangalore in 1835. The following year a lengthened tour through Mysore and Coorg was undertaken by two of the missionaries, and suitable stations selected. Gubbi was made the residence of a missionary in 1837, and a considerable number of populous villages in the neighbourhood brought under Christian instruction. In 1839 a circuit was established in the city of Mysore, in 1840 at Kunigal, in 1857 at Tūmkūr, to which the former is now attached, in 1863 at Shimoga and in 1874 at Hassan. There are also two outstations at Hunsur and Chikmagalur.

The Mission now employs 10 European missionaries and three Native assistants. The paid agents consist of 13 catechists and 141 day school teachers; the unpaid agents are 23 Sabbath school teachers and 8 local preachers. There are 10 chapels belonging to the Mission, with 19 other preaching places, the total attendance at public worship

in which is put down as 1,320. The number of full and accredited members of the church is 404, with 31 others on trial. There are 47 day schools, with 3,810 pupils, and 6 Sabbath schools, with 207. Of the total number of children under instruction, 2,597 are boys and 1,354 girls.

Many of the missionaries are employed almost daily in preaching in the open air, as well as on certain days in chapels and school-rooms. Others are engaged in schools. The educational operations of the Mission have been attended with much success, and until the formation of the Government Educational Department in 1857, the English instruction of native youth was entirely in their hands. A first class institution was maintained at Bangalore from 1851, and this, with one established at Mysore in 1854, are still carried on, teaching up to the University entrance standard.

To the printing establishment of the Mission, set up at Bangalore in 1840, the Canarese people are much indebted. Here, in 1848, were perfected by the Revds. J. Garrett and T. Hodson, in conjunction with Mr. Watt, a type founder in England, a variety of improvements in Canarese type, resulting in a great saving of time and labour, and by the introduction of spaces between the words promoting facility in reading. A Canarese translation of the Bhagavad Gita was printed in the new type, and subsequently a portable edition of Reeve's Canarese-English Dictionary, edited by the Revd. D. Sanderson of this Mission. The Canarese Bible, in the new translation of which this gentleman took an important share, and a great number of other useful publications issued from this Press. In 1872 the Mission disposed of the establishment to a private person.

The *Church of England* is represented by 4 chaplains and 2 missionaries in Bangalore, and one chaplain at Mysore, all under the ecclesiastical jurisdiction of the Bishop of Madras. Their work lies principally among the military and the European residents in the Cantonment, but the chaplains of Bangalore in turn make periodical tours to the head-quarter stations of the several Districts. The number of churches on the establishment is 6, and the number of persons attending worship estimated at 2,113. There are also large schools attached, and an orphanage.

The *Church of Scotland* has a Kirk and schools at Bangalore, under the care of a chaplain. The attendance at public worship is 400.

There are also two small communities of *Baptists* and *Methodists* in Bangalore.

LANGUAGE AND LITERATURE.

The distinctive language of Mysore is Kannaḍa—the Karnāṭaka of the Sanskrit pandits and the Canarese of European writers.* It is one of the family of South Indian languages†, on which the name Dravidian has been bestowed ;‡ but Karnāṭaka seems to have been a generic term applied to both Kannaḍa and Telugu. The South Indian languages may therefore be conveniently described as forming two branches of one family,—the northern or Karnāṭaka, and the southern or Drāviḍa, the two being separated by the foot of the Ghat ranges, or a line running along their base from a little north of Mangalore on the western coast, through Coimbatore, to a little north of Madras on the east coast.

The derivation of Karnāṭa, and its adjectival form Karnāṭaka, is unknown, but it is the only name for a South Indian people used in Sanskrit writers which appears not to be Sanskrit, and Dr. Gundert has proposed *kare nāḍu*, 'the black country,' as the original form of Karnāṭa, in allusion to the black cotton soil of the plateau of the southern Dekhan. Kannaḍa might be a *taḍbhava* formed from Karnāṭa.§

The limits within which the Kannaḍa proper is spoken comprise the plateau of Mysore, the southern Mahratta country, the west of the Nizam's dominions, and Canara. Wilks thus defines the region, but omitted the last, which is added in brackets.

* Telugu is spoken in the east of Mysore; Tamil, by camp followers and body servants of Europeans; it is also the house language of Sri Vaishnava Brahmans, but they can neither read nor write it. Hindustani is the common language in use among Mussalmans.

† The other chief ones are Telugu or A'ndhra; and Tamil or Drāviḍa, which is called Arava by the Mysoreans. Malayālam may be considered an offshoot from Tamil.

‡ By Dr. Caldwell, who considers Drāviḍa or Tamil as the representative of the group.

§ Mr. C. P. Brown, with his usual versatility, has striven to get a clue from the name of Canada, the British Dominion in North America, which according to him is a name unknown to the aborigines, and supposed to mean *ca-na-da*, 'we have nothing'! (*Cann. Chron.* App. 84). But Welster puts it down as an (American) Indian word, meaning a collection of huts, a village, a town.

In the *Mackenzie Mss.* the derivation of Karnāṭaka is given as *karna āṭaka*, 'passing to the ears' of all men, and hence applied to 'this honoured and renowned country.' The same derivation also appears in the *Viśvagunāḍars'ana*, a work more than 200 years old.

If a heterogeneous compound (*arisaṁāsa*) be permissible,—of which there are many examples and for which there are special rules in the language—Karnāṭa might perhaps be *karna āṭa* amusing or pleasing to the ear: the 'sweet musical Canarese' of Colonel Meadows Taylor.

The northern limits commence near the town of Beder, in lat. 18° 45' N. about 60 miles N. W. from Haidarabad ; following the course of the language to the S. E., it is found to be limited by a waving line which nearly touches Adoni, winds to the west of Gutti, skirts the town of Anantapur (in Bellary District), and passing exactly through Nandidroog, touches the range of Eastern Ghats ; thence, pursuing their southern course to the mountainous pass of Gajalhatti, it continues to follow the abrupt turn caused by the great chasm of the western hills between the towns of Coimbatore, Palachi and Palghat ; and sweeping to the N. W., skirts the edges of the precipitous Western Ghats [to a point about opposite Mangalore, whence it follows the coast line to Carwar, and again goes with the Ghats] nearly as far north as the sources of the Krishna ; whence following an eastern and afterwards a north-eastern course, it terminates in rather an acute angle near Beder, already described as its northern limit.

The following dialects of Kannada are also spoken in the south :—

- Kodagu, Kudagu or Coorg, in the principality of that name ;
- Tulu or Tuluva, in South Canara ;
- Tuda or Toda, the language of the people of that name in the Nilgiris ;
- Koṭa, spoken by the tribe so called in the Nilgiris ;
- Baḍaga, the speech of the people bearing that name in the Nilgiris.

The numbers of the races speaking these languages and dialects are

Kannada or Canarese ...	9,250,000	estimated at near ten millions, according to
Kodagu or Coorg ...	150,000	the statement in the margin, though owing
Tulu ...	300,000	to the want of statistics regarding the
Toda or Tuda ...	750	Nizam's territory, the figures relating to
Kota ...	1,150	Kannada are somewhat uncertain, and may
Baḍaga ...	19,500	be found to need enlargement.* The others are more reliable.
	9,721,400	

Three stages may be recognized of the Kannada language, namely: Pūrvada Hale Kannada or Primitive Old Canarese ; † Hale Kannada or Old Canarese ; and Hosa Kannada, the New or Modern Canarese. The first period may be described as terminating about the end of the 7th century ; the second extends from the 8th to the 14th century ; when the third commences : but these dates are not to be taken absolutely, and the periods in different parts of the Kannada region may be found to overlap or run into one another.

* Telugu is spoken by 15,500,000 ; Tamil by 14,500,000, and Malayalam by 3,750,000.

† Nāga Varmma and Keṣava, grammarians who belong most probably to the 11th and 12th centuries, and wrote in what is to us Hale Kannada or Old Canarese, both refer to a Hale Kannada as existing in their day, regarding the forms used by themselves as Hosa Kannada or Modern Canarese. Wilks describes Pūrvada Hale Kannada as the language of Banavasi.

Hale Kannada becomes by the rules of euphony Hale Gannada ; similarly Hosa Kannada becomes Hosa Gaunada, also in old works written Posa Gannada.

The written character which is common to Kannada and Telugu, and which spread over the south and was carried even to Java, is derived, through that of the cave inscriptions in the west of the peninsula, from the south Asoka character, or that of the Girnar inscription, be longing to about 250 B. C., prior to which date no specimens of writing have been discovered in India. The ancient character alluded to is considered by Max Muller to be of Semitic origin, though this has not as yet been satisfactorily traced back.

The Kannada alphabet, as now arranged, corresponds with the Sanskrit, but with some additional characteristic letters. Thus, among the vowels, while Sanskrit has only long *e* and long *o*, Kannada has both a short and a long form of each of these vowels: *ri*, *ri*, *li*, *li*, are not Kannada. Of the consonants, according to Nāga Varmma, the aspirated letters and two sibilants seem not to have belonged to the language originally, namely, *kha*, *gha*, *chha*, *jha*, *ṭha*, *ḍha*, *tha*, *dha*, *pha*, *bha*, *s'a* and *sha*. On the other hand, three consonants not in Sanskrit are pure Kannada, namely, *ḷa*, *ra*, and *la*. Of these, only the first, which corresponds with the Vedic *ḷa*, is now in use.* The other two are obsolete, though the *ra* is still used in Telugu.

The disappearance from Kannada literature, first of the *ḷa* (perhaps about the 12th century), and subsequently of the *ra* (perhaps not till the 17th century), serves to some extent to mark definite periods, and is so far a guide in determining the date of manuscript works, especially if in verse, as the requirements of the rhyme will shew infallibly what was the original letter used though it may have been changed in transcribing. Similarly there is what have been called the P and H periods, words now spelt with the latter having formerly appeared with the former, as *posa*, *hosa*; *Poysala*, *Hoysala*; &c. The different stages of the language exhibit a change or transition in the forms of most of the letters of the alphabet, especially the pure Kannada ones; but these again cannot be assigned so exactly to fixed dates as to be sufficient by themselves for chronological purposes.

The relationship of the south Indian languages to the other grand divisions of human speech is thus stated by Dr. Caldwell.

‘The Dravidian languages occupy a position of their own, between the languages of the Indo-European family and those of the Turanian or Scythian

* This is rather quaintly expressed, as follows, in one of the examples in the *Sabdanushāsana—Kannadigar ḷa-kāraman odambattar*.

group—not quite a midway position, but one considerably nearer the latter than the former. The particulars in which they accord with the Indo-European languages are numerous and remarkable, and some of them are of such a nature that it is impossible to suppose that they have been accidental; but the relationship to which they testify—in so far as they do testify to any real relationship—appears to me very indefinite as well as very remote. On the other hand, the particulars in which they seem to me to accord with most of the so called Scythian languages are not only so numerous but are so distinctive and of so essential a nature that they appear to me to amount to what is called a family likeness and therefore naturally to suggest the idea of a common descent.

The Scythian family to which on the whole the Dravidian languages may be regarded as most nearly allied is the Finnish or Ugrian, with some special affinities as it appears to the Ostiak branch of that family; and this supposition derives some confirmation from the fact brought to light by the Behistun tablets that the ancient Scythic race, by which the greater part of Central Asia was peopled prior to the irruption of the Medo-Persians, belonged not to the Turkish, or to the Mongolian, but to the Ugrian stock.'

On the other hand the Indo-European relationship of the Dravidian languages has been advocated by Dr. Pope on the ground of 'deep seated and radical affinities between them and the Celtic and Teutonic languages.' But Dr. Caldwell observes in reply that 'of all the members of the Indo-European family the Celtic is that which appears to have most in common with the Scythian group, and especially with the languages of the Finnish family,—languages which may possibly have been widely spoken in Europe previously to the arrival of the Celts.'

Professor Max Muller, who has placed Canarese among the Turanian languages, describes them as follows :—

The most characteristic feature of the Turanian languages is what has been called *agglutination*, or 'gluing together'. This means not only that, in their grammar, pronouns are *glued* to the verbs in order to form the conjugation, or prepositions to substantives in order to form declension; . . . but that in them the conjugation and declension can still be taken to pieces: and although the terminations have by no means always retained their significative power as independent words, they are felt as modificatory syllables, and as distinct from the roots to which they are appended. In the Aryan languages the modifications of words, comprised under declension and conjugation, were likewise originally expressed by agglutination. But the component parts began soon to coalesce, so as to form one integral word, liable in its turn to phonetic corruption to such an extent that it became impossible after a time to decide

which was the root and which the modificatory element. The difference between an Aryan and a Turanian language is somewhat the same as between good and bad mosaic. The Aryan words seem made of one piece, the Turanian words clearly show the sutures and fissures where the small stones are cemented together.

Professor Whitney has the following remarks on the subject :—

The Dravidian tongues have some peculiar phonetic elements, are richly polysyllabic, of general agglutinative structure, with prefixes only, and very soft and harmonious in their utterance ; they are of a very high type of agglutination, like the Finnish and Hungarian . . . Excepting that they shew no trace of the harmonic sequence of vowels, these languages are not in their structure so different from the Scythian that they might not belong to one family with them, if only sufficient correspondences of material were found between the two groups. And some have been ready, though on grounds not to be accepted as sufficient, to declare them related.

The native grammarians, as is well known, deduce all the Indian languages from Sanskrit, through one or other of the Prākritis. Nāga Varma, the earliest Canarese grammarian whose works have been discovered, assumes the existence in India of three and a half mother languages—Samskrīta, Prākṛīta, Apabhraṃsa and Paisāchika*—and of fifty six daughter languages sprung from them—Drāviḍa, A'ndhra, Kaṛṇāṭaka, &c. But Kannada, in common with the cognate languages of the south, recognizes four classes of words as in current use for literary purposes—*tatsama*, pure Sanskrit words ; *tadbhava*, corrupted Sanskrit words ; *des'ya*, indigenous words ; and *grāmya*, provincialisms. To these a later classification adds *anyad'es'ya*, foreign words. Now the *des'ya* class alone can be taken to represent the pure language of the country, the real Kannada as distinguished from what has been imported from Sanskrit or other sources. And this view is borne out by the fact that the *des'ya* words not only include all the terms expressive of primitive ideas and common names of things connected with the earlier stages of society, but that they form the bulk of the language (nearly three-fourths according to a rough estimate from the Dictionary), and furnish the model on which terms introduced from other languages are framed. Imported expressions, therefore, though largely used—especially by Brahmans, who venerate Sanskrit, and who are now the principal literary class—for the purpose of imparting a scholarly elegance to their composition, are not essential

* Perhaps called half a language because spoken only by barbarous tribes .

to the culture of the language. This is evident from the use of Kannada alone in old works such as the grammar called *S'abda Mani Darpana*.*

The oldest specimens, alike of Kannada composition and of its written character, that have been as yet met with, to which dates can with certainty be assigned, are in the grants inscribed on copper plates of the Chera kings of Kongu, and belonging to the 3rd and 5th centuries A. D.† There are similar specimens for the 6th, 7th and 8th centuries, from which time examples become more and more numerous.

The Jains seem entitled to the credit of being the first cultivators of the Kannada language, but it is not easy to give the date at which the first literary efforts were made. A considerable body of literature, however, had undoubtedly been created before the end of the 13th century, at which time Mr. Kittel is of opinion that Brahmanical and Lingáyata Canarese literature most probably came into existence.‡ He also justly remarks as follows:—"Of Tamil literature it has been said that it is the only vernacular literature in India which has not been content with imitating the Sanskrit, but has honourably attempted to emulate and outshine it. But my own impression is that the more Canarese vernacular literature becomes known, the more evident it becomes that it will fully bear comparison with any other vernacular literature of the South."§ I would go further, and say that no Indian vernacular contains a richer or more varied mine of indigenous literature, though scarcely at all known or explored; a literature, moreover, which, as the product to a great extent of Jain and Lingayat authors, is independent of Sanskrit and Brahmanical works.

Among the most important of the earliest compositions that have been obtained are those of Nága Varmma, a distinguished Kannada grammarian.¶ Nága Varmma, according to the statements in his works, was a native of Vengi, the kingdom of the Pallavas and after them of the Eastern Chálukyas, and which he expressly distinguishes from A'ndhra.

* This work lays down in its concluding verse the following standard of good Canarese:—

Gamaka-samásadim ra-la-kulakshadim s'rutisahya-sandhiyimi
samuchutamági harpa sati-saptamiyim fama-samskritoktiyimi
Va-ma-ha-pa-bhéladim virahitavyaya-samskrita-lingadim pudól
ttama-s'ithulatradim yati-vilanghanadind aridalte Kannaḍam.]

Which may be rendered as follows:—With energetic compounds, with distinction of ra, la and ha, with euphonious combinations, moving fitly along (i. e. in harmony with the subject); from the use of the locative-infinitive, from apt expressions from Sanskrit, from observance of the difference between va, ma, ha and pa, from the absence of Sanskrit gerunds and genders, from the gliding consonants of well chosen words, from precision in rhyme:—is it not by these that Kannada is known?

† *Ind. Ant.* I, 363; III, 152; V, 133. ‡ *Naga Varma's Prosody*, Int. xlvii. § *ib.* lxxi.

¶ His *Chhandas* or *Prosody* has been edited and published by the Revd. F. Kittel; his *Bhāshā Bhāṣhana* I am preparing for the press.

If he be rightly assigned, as is proposed, to about the year 1000 A. D.* he must have flourished under the latter of the two dynasties, and perhaps in the reign of the king Sakti Varmma.

Another important author on the language whose works we have is Kesava or Kesi Rāja, who wrote the grammar named *Sabda Mañi Darpāna*.† Kesva's period is put down as about 1130—1180.‡ He was probably a native of Kalyāṇa, the capital of the Western Chālukyas, and flourished just before the time when Bijjala usurped the Chalukya throne, and Basava became the founder of the Lingayat faith.

In the following statement of authors and their works—much information regarding which has been obtained from Mr. Kittel's valuable publications on the subject—an attempt has been made to arrange them as far as possible chronologically. It will serve to illustrate the extent and character of the indigenous literature of Karnāṭaka, though several of the works were doubtless written in Sanskrit, the language of the learned.§

Period.	Names of Authors.	Names of their Works.
A. D.		
240	Mādhava Raja	... <i>Dattaka-sūtra-vṛtta</i> . (Ins).
470	Avinita	... <i>Kirātārjunīya-līka</i> . (Ins).
720	Sāmanta Bhadra	... <i>Devāgama stotra</i> ; <i>Nyāya nis'chaya vārttikālankāra</i> ; <i>Uktyānusāsana</i> ; <i>Bhāṣā Manjari</i> . (H, P, K, A)
788	Akalanka, Akalanka Chandra, Akalanka Bhaṭṭa, Akalanka Deva.	A <i>Nyāsa</i> on the above <i>Devāgama stotra</i> ; <i>Pramāna ratna pradīpa</i> . If the same that refuted the Buddhists at the court of Hemasitala in Kanchi, his date, according to Wilson, is 788 (H, P, A.) An Akalanka was the author of the <i>Karṇāṭaka Sabdānusāsana</i> , but as two commentators on it, the last of whom wrote in 1604, also bore the name of Akalanka, it is difficult to decide where the work is to be placed.
	Vidyānanda, Vādi Vidyānanda	<i>Slokavārttikālankāra</i> and a <i>nyāsa</i> on the <i>Aṣṭa mīmāṃsa</i> . (H.)

* *N. F. Pros. Int.* xxxviii, xli.

† *Ib.* xli.

‡ It has been published both at Bangalore and Mangalore. The latter edition, by Mr. Kittel, is the best, and contains the *vyākhyāna* or commentary of Nishṭhūra Saṅgya.

§ The authority on which the names are placed in the order given in the text is indicated by the following letters:—H for the list of Huncha gurus, P for Pampa, N for Nāga Varmma, K for Kesava, A for Abhinava Pampa, R for Rudra Bhaṭṭa, S for Salva, I for Isvara, D for Devachandra. That is to say, the author against whose name any of these letters appears is either quoted or mentioned by that authority, and consequently preceded him. It is unnecessary to state that the list is only tentative.

Period.	Names of Authors.	Names of their Works.
A. D.		
902	Sukhi Sena ...	<i>Nyāya Kumudachandrodaya</i> ; <i>Sākaṭāyana sūtra vyākhyāna</i> . (H.)
	Pūjyapāda, Kaviparimeshtī Pūjya- pāda Swāmi.	<i>Jainendra Nyāsa</i> , <i>Pāṇini's abhidatāra</i> , <i>Kārikāśrīti</i> , <i>Sūrasa Saṅgraha</i> , <i>Vaidya sūtra</i> & the same. (H, P, K, A.)
	Pampa, Hampa Deva, Guru Hampa Deva, Kavita Guṇārṇava, Sukavijana-manoma- nasottamaśa Hama, ? Sujanottamaśa Hama Rāja.	<i>Alī Purāṇa</i> , which was completed in 941, and in which he states his <i>noms de plume</i> . From the manuscript in my possession, the oldest Kannaṇa work with a date that I have met with, it appears that he was born in 902, and was 'a bee at the feet of Sura Dundubhipati of the Dundubhi simhāsana' in Kerala. (N. K.)
	Haripāla ...	There is also a <i>Hampana Bhārata</i> quoted in <i>Kāṇya Sāra</i> . Mr. Kittel has seen a <i>Rāmachandra charite</i> and a <i>Hampaka Bhārata</i> by Chatura Kavita-guṇārṇava. Also by Hampa Kavi, a <i>Laghu purāṇa</i> , <i>Pārsvanātha purāṇa</i> and <i>Paramāgama</i> .
	Naya Sena, Nayasena Deva ...	He is quoted as an authority alike by Naga Varṇma, Kesava, and Akalanka.
	Guna Bhadra ...	<i>Dharmma mitra purāṇa</i> . (N, D).
	Sarva Varṇma ...	<i>Uttara Purāṇa</i> (N).
	Guna Varṇma ...	(N).
	Bandhu Varṇma ...	<i>Harivamsa</i> ; ? <i>Pushpadanta purāṇa</i> . Con- temporary with Naga Varṇma. (N, K).
	Mangarasa, Manga Rāja.*	<i>Harivamsābhyaṇḍaya</i> , ? same as above.
c. 1000	Samba Varṇma ...	<i>Harivamsa</i> ; <i>Nemi Jineendra charitra</i> , & the same; <i>Manmatha charitra</i> ; <i>Samyaktva</i> <i>Kaumudi</i> ; <i>Karnata Sabda Manjari</i> .
	Sankha Varṇma ...	Contemporary with Naga Varṇma. (N).
	Nāga Varṇma, Kavirāja Hama, Nāki, Nākiḡa, Pināki.	(K) may be same.
	Sānti Varṇma, Kamala Bhava ...	<i>Kāvyaivalokana</i> , <i>Chhandas</i> , <i>Nighantu</i> , <i>Kar- nāṭaka Bhāṣā Bhāṣana</i> . From the second of these works it is ascertained that he was a native of Vengi, and the above probable date has been determined by Mr. Kittel on the evidence stated in his preface. (K, I).
	Nemichandra, Kavirāja Kunjara.	<i>Sāntinātha Purāṇa</i> .
	Gajaga ...	<i>Lilāvati</i> or <i>Lilāvati prabandha</i> ; also ? <i>Gomaṭa sūra mūla</i> and <i>Tribhāṅgi para- māgama</i> . (K).
	Gunanandi ...	(K)

* A Maṅgi Rāja occurs among the Eastern Chalukyas, as reigning in the latter half of the 7th century.

Period.	Names of Authors.	Names of their Works.
	Manasija ...	(K R)
	Chittaja ? the same ...	(I).
	Asaga ...	(K)
	Chandra Bhaṭṭa ...	(K R)
	Sri Vijaya ...	(K)
	Honna, Ponna ...	(K)
	Ponnamayya ? the same...	(R)
	Abhinava Manga Raja...	<i>Manga Raja Nighantu</i> or <i>Kavi Mangá- bhidána</i> . A valuable dictionary on the plan of the <i>Amara Kosha</i> , giving Canarese meanings for Sanskrit words commonly used in the language. (He refers to Naga Varmma as a predecessor.)
1060— 1088	Bilhana ...	<i>Vikramánka Deva Charita</i> or <i>Vikramánka Kavya</i> ; <i>Panchasikha</i> ; <i>Ramacharita</i> or <i>Ramastuti</i> ; ? <i>Alankára sūtra</i> . He was apparently educated in Kashmir, but even- tually became Vidyapati or chief paṇḍit to the Chalukya king Vikrama of Kalya- na, who reigned 1076--1127, and whose adventures form the subject of his poem. At Kalyana the poet probably died, about 1088. The <i>Vikramánka Deva Charita</i> has been published by Dr. Bühler, who has determined that Bilhana wrote it at an advanced age, about 1085 (I).
1090	Bāṇa, Bāna Bhatta.	<i>Sri Harsha charita</i> , a life of Sri Harsha or Harsha Varddhana of Thanesar, who came to the throne in 1088 (I).
1100	Sumanobāna. ... Mallikārjuna, Mallikārjuna Raya.	The father-in-law of Kesava, ? same as above. <i>Chhara kathe</i> , an account of Somasekhara and Chitrasekhara, the sons of Vajra Mukuta Raya of Ratnapura (See Vol. II. p. 499). He was the father of Késava. A poet of this name is quoted in <i>Kavya Sāra</i> .
1130— 1180	Kesava, Kesi Raja.	<i>Sadbhāmanidarpana</i> , <i>Cholapātuka Charitra</i> , <i>Subhadrāharana</i> , <i>Prabodha chandra</i> and <i>Kirāta</i> . The first work has been publish- ed by Mr. Kittel, who has determined its period. Kesava was a native of Kalyana. (I).
1110	Gunachandra ... Vritti Vilāsa ... Nāchi Raja ...	<i>Pārsvābhūdaya</i> , <i>Māghanandistara</i> . <i>Sūtra sāra</i> and <i>Dharma parikshe</i> . <i>Nāchirajya</i> , a Canarese commentary on the <i>Amara Kosha</i> .
	Appāji Chāmunda Raya, Ganga-bhūshana.	<i>Appājiya</i> do <i>Chāmunda Rāja Purāna</i> , (D, who says he preceded A).

Period.	Names of Authors.	Names of their Works.
c. 1160	Nagachandra, Sukavindra, Chandra kirtti chitti.	<i>Jinamunitanaya</i> ; <i>Arádhana niti</i> . (A, who takes him as his model).
	Mágha Nandi ...	(D, as preceding A).
	Siddhánti Kumudendu...	Do
	Vira Nandi ...	(A).
1189	Abhinava Pampa ...	<i>Vimachandra Charitra Purána</i> , commonly called the <i>Pampa Ivámáyana</i> . This beautiful work, which deserves to be better known, has been published at Bangalore, for the Educational Department.
	Yaksha Varmma ...	<i>Chintámáni</i> , a commentary on <i>Sákatáyana</i> .
	Akalanka, Bhattakálanka Deva.	<i>Bháshá Manjári</i> , a commentary on the <i>Karnáka Sabdánusásana</i> , also by an Akalanka, whether himself or an older grammarian is doubtful. The question is further complicated by the existence of a second commentary on both the above, also by an Akalanka, the date of which, however, seems clearly to be 1604. This author is placed here on the strength of an allusion in an inscription at Balgami, dated in 1161, which states that it was a place where commentaries were composed on the Kaumára, Pálini, <i>Sákatáyana</i> , <i>Sabdánusásana</i> and other grammars.*
1250— 1300	Aggala, Argala I'eva	<i>Chandraprabha pínána</i> , which he finished in 1189. Also ? of a <i>Lilávati</i> for Aggala <i>Lilávati</i> is quoted in <i>Kavya Súra</i> .
	Karnama, Karnapárya perhaps the same.	(R.) <i>Neminátha Purána</i> . The author takes Nava Pampa as his model, and prays that more such poets may arise. He was a disciple of the gurus to the Raja of Kollapura, and wrote his work for Aditya bhupa, the ruler of Kilekila.
	Gajinkusa ...	(R) ? the same as Gajaga, above.
	Rudra, Rudra Bhatta.	<i>Jaganmátha Vijaya</i> ; perhaps <i>Rasakálike</i> ; <i>Viraktara Kárya</i> ; <i>Kárya Súra</i> . The last (a manuscript of which is in my possession, from a copy made by Abhinava Vádi Vidyánuanda swami) consists of extracts from the best Kannada poets, classified so as to illustrate the treatment of each of the essential sentiments of poetry (S).

* Kaumára Páliniya *Sákatáyana Sabdánusásana* li vyákarana vyákyána sthánamum.—*M. s. Ins.* S. S. 43. I have the Kaumára Vyākaraṇa, which is of some interest, and hope to publish it. Also the *Sabdānusāsana*, with its two commentaries, a voluminous and exhaustive treatise on Canarese Grammar.

Period.	Names of Authors.	Names of their Works.
	Amrita Nandi	... A work on composition; also ? <i>Akārādi Ni-ghanṭu</i> , stated to be the <i>Dhammantari Nighanṭu</i> or <i>Materia Medica</i> (S).
1292—	Vidyanātha	... <i>Pratāpa Rudrīya</i> (S).
1335	Hemachandra	... (S).
	Kāma, Kavi Kāma	... A work on composition (S).
	Udayāditya	... I'o do
	Ganesvara	... <i>Sāhitya sanjivana</i> (S).
	Lakshmisa	... <i>Jaimini Bhārata</i> . He was a native of De- vanur in Banavar taluk. The date of this admired work has been much discuss- ed. The Devanur <i>sthala purana</i> puts him in 1137. Wilson says he dedicated his work to Vira Ballala (1191—1207.) A native editor assigns him to about 1690, and Mr. Kittel to 1760. Certain points of internal evidence are considered con- clusive as to his modern date. On the other hand, passages in S point to a <i>Jaimi- ni Bhārata</i> in his day, which Mr. Kittel is under the necessity of considering a different work. In a private letter, how- ever, he states that he should have put Lakshmisa in the 14th century if he had any clue for doing so.
	Sālva	... <i>Nasaratnākara</i> .
c. 1290	Harisvara, Hampe Haripam.	<i>Girija kalyāṇa</i> (quoted in <i>Kāvya śāra</i>); <i>Siragana</i> ; <i>Nambaiyana Ragale</i> . cf. Hari- pāla above.
c. 1300	Rāghava, ? Rāghavānka.	<i>Adayyana katha</i> . He was a disciple of the foregoing. An <i>Aṇḍayya</i> is quoted in <i>Kāvya Śāra</i> .
c. 1300	Somesvara, Somesa, Somanātha Kavi.	<i>Somesvara śataka</i> ; <i>Gana sahasra nāma</i> . He wrote a <i>Basava Purana</i> in Telugu, on which the Canarese work of the same name, dated 1369, is founded. He was an Arādhyā Brahman of Pālkurike (said to be in Godaveri District; but there is a Mālkurike not far from Gubbi.)
c. 1300	Harabhakta	... <i>Bhāshya</i> on the Vedas. He was a Lingayat mendicant of Anekanjanur.
c. 1330	Siva Kavi, Siva Kavisa...	Apparently a <i>Basava Purana</i> .
1369	Bhima Kavi	... The generally received <i>Basava Purana</i> , which he finished in 1369. He was the son of the foregoing.

Period.	Names of Authors.	Names of their Works.
	Shankara, Mallanārya, Malhana, Malanāchāri.	<i>Basava Purana</i> in Sanskrit. <i>Virasaivāmṛita</i> , <i>Sivabhaktara purana</i> and <i>Bhāvachintāratna</i> , or <i>Satyendra Chola</i> <i>katha</i> . In Telugu he wrote a <i>Ramastava</i> <i>raja</i> . He was a native of Gubbi, near Tūmkūr.
	Kavi Bomma ... Brammaya Kavi, ? the same as the above.	<i>Chaturāsya Nighanṭu</i> . <i>Jinadatta Raya Charitra</i> , <i>Dvādas'ānup-</i> <i>reksha</i> . These authors are placed together simply from the similarity of names. There is also a <i>Sanatkumāra charitra</i> by a Kumāra Bammaraśa.
	Singi Raja ...	<i>Mala Basava charitra</i> or <i>Hara katha</i> <i>s'aradhi</i> .
1450— 1477	Chama Arasa ...	<i>Prabhu linga lile</i> .
	Linga, Guru Linga, Lingana.	<i>Kabbigara Kaipidi</i> , <i>Bhikshalana Kavya</i> , <i>Chola Sangatya</i> . He was the first minis- ter of the rays of Uggehali (? in Manjara- bad).
	Mahalinga ? the same ...	<i>Ashṭavarna tilaka</i> .
	Basava linga do ...	<i>Sivādihikya Purana</i> .
c. 1480	Tota ārya, Tota siddhalinga, Totayati, Siddhesa.	<i>Sabda Manjari</i> .
1508	Kumāra Vyāsa ...	Translator of the first 10 parvas of the <i>Maha Bhārata</i> into Canarese, about the time when Krishna Raja came to the throne of Vijayanagar.
	Timmana ...	<i>Krishna Raja Bhārata</i> , which completes the work.
	Isvara ...	<i>Kavijihvabandhana</i> . He claims to be the modern Kesi Raja.
1538— 1564	Purandhara Vithala of Pandaripura ..	<i>Vaishnava dāsapadas</i> . <i>Mohana tarangini</i> , or <i>Vara Mohana taran-</i> <i>gini</i> ; <i>Krishna charitra</i> and <i>Krishna bhak-</i> <i>ti s'ara</i> . He appears to have been a Beda. He belonged to Kāginele, and was probably contemporary with Purandhara.
1585	Virupāksha Pandita ...	<i>Channa Basava Purana</i> , which was finished in 1585, at Vijayanagar.
	Kumāra Vālmiki ...	The Canarese <i>Ramāyana</i> dedicated to the god Narasimha of Torave in the Sholapur district, and hence called <i>Torave Rama-</i> <i>yana</i> .
c. 1590	Chātu Viṭhalanātha, ? Gopinatha.	Translator of the <i>Bhāgavata Purana</i> .

Period.	Names of Authors.	Names of their Works.
1604	Venkaya árya, Hari Dása ...	<i>Krishna lilābhyudaya.</i>
	Adriś'a appa ...	<i>Praudha Rāja charitra.</i> He was a native of the Kollapura payana in the Bijapur district.
	Bhaṭṭakalanka Deva, Sri Bhaṭṭakalanka.	<i>Manjari Makaranda</i> , a second or additional commentary on the <i>Karnāṭaka Sabdānuśāsana</i> , the first being the <i>Bhāshā Manjari</i> . It would almost appear as if he were the author of all three, but that the text seems a much older work. An inscription at Balgami of the time of Bijjala, dated 1161, states that "commentaries were there written on the Kaumāra, Pāṇiniya, Śūkatāyana, <i>Sabdanusāsana</i> , and other grammars." This might be the text in question. Mr. Kittel considers the work posterior to Kesava, as he would have mentioned it in the <i>Sabdamanidarpana</i> if then existing. He further considers that it is based on the <i>Sabdamanidarpana</i> , from the reduced version of which Bhattakalanka seems to have taken many of his examples.
	Niṣṭūra Sanjayya ...	A commentary on the <i>Sabdamanidarpana</i> , in which he quotes from the <i>Sabdanusāsana</i> .
1650	Nanja Kavi, Nanjaya.	<i>Kanṭhirava Narasa Rāja chārītre, Kapota Vākya.</i>
1650	Nanjunda Kavi? the same	<i>Kumara Rama charitra.</i>
	Govinda Vaidya ...	<i>Kanṭhirava Narasa Rāja Vijaya.</i>
1650	Nijagūṇa Yogi ...	<i>Kaivalya Paddhati; Anubhava sāra; Paramānubhava bōdhe; Paramārtha gīte; Purātana tripadi; Viveka chintāmani.</i>
	Chikka Nanjesa, Chikka Nanjaya.	<i>Rāghavānka charitra</i> , an account of the poet Raghava (see p. 403). The author was disciple of a guru at Puvallipura, (Hubballi near Dharwar).
"	Sāntesa linga ...	<i>Siva kathāmṛita sūtra</i> , the Lingayat translation of the Brahmoṭṭara Purana.
"	Sahajānanda ...	<i>Bhakti rasāyana</i> . He was a disciple of Sachidānanda (? the first Sringeri guru of that name).
1657	Shadakshari Deva ...	<i>Rāja Sekhara Vilāsa</i> , which he completed in 1657. Also of <i>Sabara Saṅkara Vilāsa</i> and <i>Vṛishabhendra Vijaya</i> in Canarese; and of <i>Kavikarna rasāyana</i> , <i>Bhaktādhikya</i> and <i>Sivādhikya</i> in Sanskrit. The <i>Rāja Sekhara</i>

Period.	Names of Authors.	Names of their Works.
		<i>Vilāsa</i> is the most admired poem in Canarese for its purity and diction. It is based on the <i>Bhārachintāratna</i> of Mallanārya (see p. 404) and is a romance based on the adventures of Raja Sekhara, son of the Saiva king Satyendra Chola. The author was disciple of a guru of the Danagur matha, south of Bangalore, and died at Yelatur.
1680	Ranganatha, Sri Ranga...	<i>Amṛtāvatī</i> .
1650— 1704	Chikka Deva Raja ...	<i>Gūṇa Gopada</i> , <i>Sesha Dharma</i> . The royal author was one of the most distinguished of the Mysore kings.
1680— 1700	Tirumalayangar, Tirumakichārya.	<i>Chikka Deva Raja Yasobhishana</i> , <i>Chikka Deva Raja Vijaya</i> , <i>Sesha Kalanidhi</i> , <i>Apratima Vira charitram</i> , a work on rhetoric. This author became the minister of Chikka Deva Raja (see p. 246.)
"	Chikkopādhyāya ...	<i>Rukmāṅgada Charitre</i> , <i>Sūta Sūptatī</i> , <i>Yadavagiri mahātmya</i> , <i>Venkatagiri charitre</i> , <i>Kāmandaki nīti</i> , <i>Dīvyā suri maha prabandā</i> . This author was also a mantri to Chikka Deva Raja.
1713	Puttāya, Nagarada Puttāya.	<i>Maisur Arasugala Pūrvābhyaṇḍaya</i> . This is one of the chief authorities on which Wilk's History is based. The manuscript was saved from among those which Tippu contemptuously ordered to be taken for boiling the kulli or gram for the horses.
? 1730	Devachandra, Devachandra Dvija, Vibudhendu.	<i>Rājāvalīkathē</i> and <i>Ramakathāratāra</i> . The latter is based on Abhinava Pampa's <i>Ramachandra Charita Purana</i> , being a prose version with amplification of the story.
1760	Varāha Timmappa ...	<i>Vaishnava dāsara pada</i> .
"	Vīṭhala,	Do
"	Abhinava Purandara...	Do
"	Mādhva ...	<i>Vaishnava dāsara pada</i> ; <i>Abhimanyu kṛtāga</i> ; and <i>Chādrasena kṛtāga prasanga</i> . The author seems to have belonged to Udupi.
1761	Surāla ...	<i>Padmāvatī Dīvi Kathē</i> .
1768	Ramachandra ...	<i>Amṛtāvatī sikhānagī</i> .
1800	Sarvajña ...	<i>Sarvajña rachana</i> .
"	Raṅgayya ...	<i>Kumāra Rāma charitra</i> . He was a Lingayat and the son of a Panchāla or artificer.

Period.	Names of Authors.	Names of their Works.
1800	Channappa	... <i>Sira sarana Wāmrta</i> . He was an <i>ayya</i> of Nijugal.
1825	Chidānanda	... <i>Chidānandānubhava sīra</i> and <i>Haribhakta rasāyana</i> .
1830	Chidānandāvadhūta	... <i>Jñāna Sindhu</i> , a long treatise on Vedantism for the masses. He was a disciple of the foregoing.
1840	Shāntayya...	... A number of tales taken from the <i>Bhārata</i> and <i>Rāmāyana</i> , in <i>yaksha gāna</i> metre, intended for performance on the stage. Among others are <i>Bhishma parva</i> , <i>Drona parva</i> , <i>Karna parva</i> , <i>Ekādasi prasanga</i> , <i>Jarāsandha Kāṭya</i> , <i>Saratha Sudhanva Kāṭya</i> , <i>Saubhadra Kalyāṇa</i> , <i>Sita kalyāṇa</i> , <i>Sitāvijaya</i> , <i>Tarana saṁhāra</i> , <i>Rāvaṇa Digvijaya</i> . The author was a <i>Sārasvata</i> Brahman, a native of Gersoppa, became Principal Sadr Amin at Mangalore, and died about 1850.

It is unnecessary to extend the list. Many publications continue to issue from the press, but few are new works of literary importance. School books and re-prints of popular works chiefly occupy the attention of publishers.

The Hindu manuscripts are on the two kinds of writing material exclusively employed till about 200 years ago, and still used by the learned. They are the *ōle* and the *kaḍala*. The former was mostly used for literary works, the latter for accounts and historical records.

The *ōle* is the leaf of the *tāla* or palmyra (*borassus flabelliformis*). The material, as used for manuscripts, is stiff and flexible but brittle, of a yellowish brown colour, from 1 ft. to 2 ft. long and from one inch to 1½ inch wide. It is written on lengthwise, with an iron style, the characters being afterwards brought out by rubbing in black colouring matter. The bundle of leaves forming a work are all of the same size, and strung on thin cord, which passes through holes punched in the middle towards either extremity. A piece of wood, the size of the leaf, is placed at top and bottom, and tied down with the string, forming a binding for protection. The writing is often very minute and close together, with no break but a perpendicular stroke between one part and another. Such being the materials, the wonder is that so many works of antiquity have survived to this day.

The *kaḍata* is composed of cloth covered with a composition of charcoal and gum. It presents a black surface, which is written on like a slate, with a piece of baḷapam or pot stone. The book is of one piece, folded in and out, and is from 8 inches to 1 ft. wide, and 12 to 18 feet long. A piece of wood, the size of the leaf, is attached at either end like a binding, and the whole is put into a case of silk or cotton, or simply tied up with a bit of string. The writing can be rubbed out and renewed at will. The *kaḍata* is still used by merchants and shopkeepers for accounts. Though liable to be expunged, it is perhaps a more durable record and material than the best writing on the best paper.

The introduction of paper is due to the Muhammadans, and certain coarse kinds are still made in the country, resembling the whitey brown unglazed paper used in England for packets.

Of the Muhammadan literature of Mysore, there is not much apparently to be said. Some of the annals of the reigns of Haidar and Tippu are of interest, and translations into English have been made and published for the Oriental Translation Fund.

A few words may be added on what has been done for Kannaḍa literature by Europeans. The first undertaking was the *English-Carnataka Dictionary* of the Revd. W. Reeve, completed in 1817, and published in 1824 with a dedication to Sir Thomas Munro, Governor of Madras. Meanwhile, in 1820, Mr. McKerrell, Judge of Canara, and Carnataca Translator to Government, published his *Carnataca Grammar*, commenced in 1809, in the preparation of which he consulted the Sabdamāṇḍarpaṇa. His work was dedicated to the King (George IV). In 1832 appeared Reeve's *Carnataka-English Dictionary*, commenced in 1817, a valuable work, the only one of its kind and still in general use, though not up to the scholarship of the present day. It was re-printed in portable form in 1858.

Before this, the publication had been commenced, under the superintendence of the Revds. Dr. Moegling and Weigle of the Basel Mission at Mangalore, and at the expense of Mr. Casamaijor, former Resident of Mysore, of a series of works to form a *Bibliotheca Carnataca*. The following appeared,—*Basava Purana*, *Channa Basava Purana*, *Jaimini Bhārata*, *Rāmāyana* (2 kāṇḍas), *Rāvana Digvijaya*, *Dāsarapada*, and *Rājendranāme*, a Coorg History. A grammar com-

piled by Krishnamáchári, College Munshi, was also published about the same time at Madras, called *Hosa Gannada Nuḷi Gannadi*.*

For the introduction of printing, Canarese is indebted to the missionaries at Bellary who translated the Holy Scriptures, as before related. The first complete translation of the Bible was finished in 1827, after 16 years had been spent on the work. A similar period, from 1843—1859, was subsequently devoted to revising the translation. The study of the language especially with a view to this undertaking, directed attention to such of the indigenous literature as was accessible; and the effort to produce so voluminous a work in portable form, was the means of effecting the improvements in typography previously referred to.

The wants of schools, and of European officers required to pass an examination in the language, have been the principal motives for the publication of a variety of useful works, some of the educational books in no small numbers. But, besides the publications in connection with the *Bibliotheca Carnataca*, the most valuable original literary works that have been published are—the *Chhandas* of Nága Varma, and the *Sabda Mañi Darpaṇa* of Keshava. With these I would mention the *Pampa Rámáyana*, which is perhaps as good a specimen of purely classical Canarese of the best period of the language as could be met with.

For the full elucidation of the Kannada language and literature, the whole of Nága Varma's works should be printed, as well as the *Sabdámúsana*, with its two exhaustive commentaries. The ancient manuscript named *Kávyá Súra*, consisting of elegant extracts, classified under different heads, from Kannada poets, chiefly of the Jain period, is in my hands, and its publication would well serve to illustrate the style of perhaps the most interesting and independent age of Canarese literature. Of the older forms of the language, specimens could be easily obtained from inscriptions, of which there are nearly 5,000 in the country, and from the works of Pampa and others. All the *quasi* historical works that can be obtained ought also to be published.

Much might be added regarding the European works, some of great excellence, which Mysore has given rise to, such as *Wilks' History*,

* All these works were lithographed, and in the *Rájanđranáma* an attempt was made to overcome the mechanical difficulty presented in subscript letters by placing the compound letters side by side on the line, a system which made the reading very difficult, if not impossible, and to natives was incomprehensible, being opposed to the immemorial and established practice of the language.

Buchanan's Travels, &c. Here Sir Walter Scott laid the scene of one of the Waverley novels—the *Surgeon's Daughter*; and several lifelike and graphic sketches of the Canarese people may be found in Colonel Meadows Taylor's Indian novels. But it seems unnecessary to enter farther upon this subject.

ART AND INDUSTRY,

Fine Arts.

The monuments of sculpture, engraving, and architecture in Mysore have not been surpassed by those of any country in India. Before describing the masterpieces of design and execution, which remain and continue to extort admiration to this day, a few words may be devoted to the ruder megalithic structures which preceded them, and which abound in such numbers in all parts of the country.

Stone monuments.—The earliest, probably, in point of time are the dolmens,* consisting of enormous massive slabs of unhewn stone, supported on naturally formed slabs or columns of stone. A good specimen may be seen on the western slope of Chanráyan betta in the Nandi hills. Near it is one of the circular enclosures, built up like a wall of rough stones, which are numerous on the Nilgiri hills, and there found to be tombs. They closely resemble the *chouchas* of northern Africa.† The most numerous class of dolmens found in Mysore are stone chambers or cists, also called kistvaens. They consist sometimes of only three or four but generally of six or more stones, set up edgewise and covered by a capstone. The stone chambers or cells, which are usually not more than 2 or 3 feet high, may often be seen in great numbers near Sivite temples, arranged side by side, as if forming the boundary of a yard or enclosure towards which their open ends face. They are sometimes isolated, and of larger size, containing rude sculptures similar to those of *virakal* and *más-tikal*, to be mentioned further on.

The kistvaens are generally found below the surface of the soil, their site being indicated by one or more stone circles or cromlechs‡ above. They are thus described by Major Cole, who has explored many in Mysore and Coorg§ ‘They are not excavations, but actual structures, consisting

* From the Celtic *dol* or *dawl*, table, and *men* or *maen*, stone.

† FERGUSON, *Rude Stone Monuments*, 473, where there is an illustration.

‡ From *crom*, a circle or curved, and *lech*, stone.

§ *Ind. Ant.* II, 88. See also a paper by Capt. Mackenzie, *ib.* II, 7.

of a large flagstone of granite at the bottom, with four similar slabs, all hewn and made to fit, forming a stone cist, the capstone being a large unhewn block [or slab] of granite. This block is generally found in the centre of the circle of stones, with the top just visible above the surface, or about a foot below it. The stones forming the circle are buried from 1 to 3 feet below the surface, and project above from 1 to 2 feet.* The stone forming the eastern end of the cist generally has a circular opening, towards the top, of about 1 foot 8 inches diameter, and the capstone projects over this entrance from 1 to 2 feet. The interior dimensions of the chambers vary.*

The contents of the kistvaens consist, in nearly every case, of vessels of pottery placed against the western side facing the orifice, both kists and vessels being completely filled with earth, well rammed in by the action probably of time and water. The vessels are of various sizes and forms, often elegantly shaped. They are usually of red or black clay, well burnt and polished, and decorated with beading and lines in different patterns.† Sometimes the stone circles or cromlechs have been found on tumuli, or independent and not surrounding a kistvaen. Within them have been found, on digging, the remnants of vessels apparently buried without the stone receptacle. In one case (in Coorg) the vessels were found buried at the foot of a large stone, opposite an entrance to the circle, formed of two upright slabs arched above.

These curious structures,—dolmens, cromlechs, kistvaens, &c.—it is now known, are found throughout every part of the globe, in some countries in extraordinary numbers. In India they most abound in the west.‡ That they are memorials of a primeval race there can be no doubt, and it is generally held that they are either Turanian or Celtic. In the south of India they are often called by the natives *Pándu kolis*,§ and are sup-

* Of those opened, one was 11 feet long, 5 feet 8 inches broad, and 4 feet high. Another was only 6 by 4, but 4 feet high. One capstone measured 12 ft. 3 in. by 8 ft., and was 1 foot thick; another was 11 ft. 4 in. by 10 ft. 2 in., and varied in thickness from 1 ft. 4 in. to 1 ft. 8 in.

† One of the finest specimens found was a vase standing 2 feet 9 inches high, and 5 feet 11 inches in circumference at the centre. The mouth was 3 feet 6 inches in circumference, and the neck of the vase 2 feet 10½ inches round.

‡ A map to illustrate their distribution will be found at the end of Mr. Fergusson's book.

§ But may not this term be really of European origin, suggested by the French name, which some of the early Jesuit priests may have used to designate them? For Wace, an Anglo-Norman poet, says of Stonehenge and similar structures:—

Stanhenges ont nom en Englois,
Pieres pandues en Francois.

SIR J. LUBBOCK, *Prehist. Times*, 122.

posed to have been the residences of a pigmy race.* Others call them tombs of the Pándavas. That their object was sepulchral scarcely admits of question, and the vessels in them were probably cinerary urns for the preservation of ashes or other remains of the dead, while the open vases and dishes contained either offerings to the *manes* or food for the dead, introduced through the opening in the end, which may have been left for this purpose.

Menhirs† or free standing big stones, have been commonly erected for ages to mark particular spots. The *karu kullu* erected at the foundation of a village have been previously referred to. Others called *yelle kullu* are boundary stones, and are often rudely carved either with the Saiva symbol of the *linga*, or the Vaishnava symbols of the *shankha* and *chakra*, the conch and discus, according to the creed of the erector.

A more interesting class are the *másti-kallu* and *víra-kallu*. The former, properly *mahá-sati-kallu*, are supposed to mark the spots where widows became *sati* by burning with the dead bodies of their husbands: the latter where some hero fell in battle, or otherwise came by his death. The *másti-kal* are slabs about 4 feet high, bearing the sculpture of a pillar or post with a human arm projecting from it. The hand is outstretched and pointing upwards, the fingers being separated, with often a line in the hollow between the thumb and forefinger. Under this is a rude sculpture of the man and his wife. These stones are very common, principally I think in the south-west of Mysore.

The *víra-kal* or hero stones are often elaborately sculptured, and seem to be exclusively Saiva erections. The slab is divided into three compartments, each containing sculpture in relief. The lowest represents the scene in which the hero fell; the middle one his triumphant ascent to the world of gods, generally borne along in a car surrounded by *apsaras* or celestial nymphs; the top one shews the hero in the upper world, seated in the immediate presence of the divine *linga*. Between the scenes are sometimes a few lines of inscription, giving the name of the hero, the date of the event, &c. The lower tableaux are of much interest, as illustrating scenes from life, and shewing the costume, weapons, and other features of the time in which they were erected.

* With regard to this again, it is singular to note, as there may be the same underlying idea, that 'the Latin *manes* meant probably in the beginning no more than the Little Ones, the Small Folk.' MAX MÜLLER, *Sc. Rel.* 366.

† *Men*, stone, and *hir*, tall or big. *Minar* and *minaret* are said to be derived from the same root.

Sculpture.—The sculpture of Mysore is principally exemplified in two classes of monuments, the decoration of buildings, especially temples, and the *vira-kal*. Both draw their subjects largely from Hindu mythology, and to this the carvings on temples are entirely subordinated, but the pediment is sometimes elaborately covered with scenes from the epic poems, the illustrations being more or less drawn from life; and in the lower compartment of *vira-kal*, as before remarked, events are portrayed pretty nearly as they must have occurred. The latter class of sculpture is perhaps less varied and of ruder execution than that of temples, but some specimens which have been well preserved are equal to any in the former.

Architecture.—The oldest architecture of which any specimens exist in India is Buddhist, of the 3rd century B. C., and Mr. Fergusson argues that it was developed from the stone monuments above referred to, as it is 'essentially tumular, circular, and external, thus possessing the three great characteristics of all the so-called Druidical remains.' The wonderfully carved rail of the *Amarāvati stupa* and the so called *rathas* of Mahābalipur* are perhaps the earliest Buddhist remains in the south, and as the Pallavas under whom they were executed ruled a part of Mysore, may be mentioned here though not included within the present limits of the territory. The only erections in Mysore which I am acquainted with that may prove to be Buddhist have already been referred to, but whether the sand dunes of Talkad may cover any it is impossible to say.

The *Jain architecture* of the south of India is represented by two classes of temples, *bastis* and *betṭas*, and is in this respect different from that of the north, where the latter are unknown. The *bastis* are regular temples in the usual acceptance of that word, containing an image of one of the Tīrthankaras as the object of worship. The *betṭas*, (literally hills) are courtyards,—properly, though not always, at the summit of a hill,—open to the sky, and containing a colossal image of Gomātesvara.

'The images of this king or Jain saint' Mr. Fergusson remarks 'are among the most remarkable works of native art in the south of India. Three

* There seems no doubt that the little rath, with its circular termination, is as exact a copy of what a Buddhist chaitya hall was at the time it was carved, as that the great rath is a correct reproduction of a Buddhist vihara at the same period.

The excavations could not well have been made later than the 6th century, and it seems hardly to admit of doubt that we have here petrifications of the last forms of Buddhist architecture, and of the first forms of that of the Dravidians.—FERGUSSON, *Hist. Ind. Arch.*, 175. 329.

of them are known, and have long been known, to Europeans, and it is doubtful if any more exist.* They are too remarkable objects not to attract the attention of even the most indifferent Saxon. That at Sravan Belgola attracted the attention of the late Duke of Wellington, when as Sir A. Wellesley he commanded a division at the siege of Seringapatam. He, like all those who followed him, was astonished at the amount of labour such a work must have entailed, and puzzled to know whether it was a part of the hill or had been moved to the spot where it now stands. The former is the more probable theory. The hill, called Indra-giri, is one mass of granite, about 400 feet in height, and probably had a mass or Tor standing on its summit, either a part of the subjacent mass or lying on it. This the Jains undertook to fashion into a statue 70 ft. 3 in. in height, and have achieved it with marvellous success. The task of carving a rock standing in its place the Hindu mind never would have shrunk from had it even been twice the size; but to move such a mass up the steep smooth side of the hill seems a labour beyond their power, even with all their skill in concentrating masses of men on a single point. Whether, however, the rock was found *in situ* or was moved, nothing grander or more imposing exists anywhere out of Egypt, and even there no known statue surpasses it in height, though it must be confessed they do excel it in the perfection of art they exhibit.†

The principal group of bastis at present known above the Ghats is that at Sravan Belgola. There are there two hills—the Indra-giri on whose summit the colossal image just described stands and dominates the plain. On a shoulder of the other, called Chandra-giri, stand the bastis, fifteen in number. As might be expected from their situation, they are all of the Dravidian style of architecture, and are consequently built in gradually receding storeys, each of which is ornamented with small simulated cells. . . . Their external appearance is more ornamental than that of the generality of northern Jaina temples. The outer wall of those in the north is almost always quite plain. The southern ones are as generally ornamented with pilasters, and crowned with a row of ornamental cells. Inside is a court, probably square, and surrounded by cloisters, at the back of which rises the vimána over the cell which contains the principal image of the Tirthankara. It always is surmounted by a small dome, as is universally the case with every vimána in Dravidian architecture.

* The three are the one at Sravan Belgola, 70 ft. 3 in. high (according to some, but by actual measurement 59 ft. 3 in. I believe); one at Karkala, 41 ft. 5 in. in height; and one at Yannur, apparently about 35 ft. high. They are engraved in Moor's Pantheon, Buchanan's Travels and the Indian Antiquary. The statue of the Sun, called the Colossus of Rhodes, one of the seven wonders of the ancient world, was 105 feet high, but this was of bronze. It was erected in the 3rd century B. C., but was thrown down and broken by an earthquake 56 years after. The German statue of Hermann or Herminius, completed in 1875, is 90 ft. high to the point of the raised sword, and also of metal.

† For description, see Sravan Belgola, Vol. II.

It may be a vain speculation, but it seems impossible not to be struck with the resemblance to the temples of southern Babylonia. The same division into storeys with their cells; the backward position of the temple itself; the panelled or pilastered basement, are all points of resemblance it seems difficult to regard as purely accidental.*

Besides the greater temples, there are several varieties of smaller ones which seem peculiar to the style. Four-pillared pavilions are not uncommon in front of Hindu temples in the south, but these Jain mantapas are five-pillared, † [that is, with a pillar at each angle and one in the middle. There is one before the entrance to the betta on Sravan Belgola, the middle pillar being so supported from above that a handkerchief can be passed through below its base].

Though not the grandest, certainly the most elegant and graceful objects belonging to the Jaina style of architecture are the stambhas which are found attached to almost every temple. They are used sometimes by the Hindus, but then generally as dip-dāns or lamp-bearing pillars, and in that case have some arrangement for exhibiting light from their summit. With the Jains this does not appear ever to have been the case. Their pillars are the lineal descendants of those of the Buddhists, which bore either emblems or statues, generally the former—or figures of animals. With the Jains or Vaishnavas they as generally bore statues. Be this as it may, they seem nowhere to have been so frequent or so elaborately adorned as among the Jains in the south. . . . They generally consist of a single block of granite, square at base, changing to an octagon, and again to a figure of sixteen sides, with a capital of very elegant shape. Some, however, are circular, and indeed their variety is infinite. They range from 30 to 40 ft. and even 50 ft. in height, and whatever their dimensions, are among the most elegant specimens of art in southern India.‡

The Hindu temples of Mysore, as distinguished from those of the Jains, are divided between two styles, which the great authority on architectural questions already quoted, designates Dravidian and Chalukyan. The former prevails in the south and east, the latter in the north and west, but occasionally a building of one style will be found within the region mostly occupied by the other. The Chalukyan style, which was adopted all over the Dekhan from coast to coast,—its northern limit being a line from the source of the Godavari to the mouth of the Mahanadi, and its southern one from the sources of the Kaveri passing west of Vijayanagar to the mouth of the Krishna,—attained its fullest development and highest degree of perfection in Mysore. The Dravidian

* *Hist. Ind. Arch.*, 267—270.

† *ib.*, 274.

‡ *ib.*, 276, 336.

style did at one time, during the temporary eclipse of the Chalukya power, penetrate further north as far as Ellora, but it seems to have been a spasmodic effort and it took no permanent root there. At that time were excavated the beautiful Kailása and other temples of Dravidian architecture at Ellora, 'and there seems no race but the Cheras who could have effected this.*

Dravidian style.—The raths at Mahábalipur, dating from the 6th century, may be considered as the prototypes of the style. From them to the Kailása at Ellora 'the transition is easy, but the step considerable. At the first named place we have manifest copies of structures intended originally for other purposes and used at Mahábalipur in a fragmentary and disjointed manner. At Ellora, on the contrary, the whole is welded together, and we have a perfect Dravidian temple, as complete in all its parts as at any future period. . . . It seems certain that the square raths are copies of Buddhist viharas, and are the originals from which all the vimánas in southern India were copied, and continued to be copied, nearly unchanged, to a very late period. . . . On the other hand, the oblong raths were halls or porticos with the Buddhists, and became the gopuras or gateways which are frequently—indeed generally—more important parts of Dravidian temples than the vimánas themselves. They too, like the vimánas, retain their original features very little changed to the present day.'

The temples consist almost invariably of four parts, arranged in various manners, and differing in themselves only according to the age in which they were executed. 1. The *vimána*, or actual temple itself. It is always square in plan and surmounted by a pyramidal roof of one or more storeys. It contains the cell in which the image of the god or his emblem is placed. 2. The *mantapas*, or porches which always cover and precede the door leading to the cell. 3. The *gópuras*, or pyramidal towers over the gateway, often the loftiest and most imposing feature in the temple. 4. Choultries or pillared halls used for various purposes. Besides these, are tanks or wells and other buildings for the residence or use of the priests.

The finest Dravidian temples, as might be expected, are to be met with south and east beyond the limits of the Mysore territory. But the temple of Ranganátha at Seringapatam, of Chámundi on the hill of that

* *ib* 322. Cf. *ante*. p. 200.

name, the Halsur pagoda, the temples of Melukote, Talkad, Tirumakúlla, Ramnathpur and other places may be referred to as effective illustrations.

Chálukyan style.—The Chalukyan style is neither the least extensive nor the least beautiful of the three Hindu styles of architecture. It reached its greatest perfection in Mysore. The style is thus described. The temple itself (that is the compartment occupied by the god) is polygonal or star shaped. The sides, however, are not obtained as in the northern style by increments added flatly to a square, but are points touching a circle, at one time apparently right angles, but afterwards either more acute or flatter than a right angle. There are four principal faces larger than the others, three occupied by niches, the fourth by the entrance. The roof is in steps, and with a flat band on each face in continuation of the larger face below. The porch is simple, consisting of columns disposed equidistantly over its floor. [I would add that this porch is generally surrounded by a wide stone seat or bench, with a sloping back, which runs completely round the porch and forms as it were a low wall on every side] The details are often of great beauty, especially the entrances, which are objects on which the architects generally lavished their utmost skill. Nothing in Hindu art is more pleasing than the pierced slabs which the Chalukyas used for windows. The pillars, too, are rich without being overdone: and as it is only in pairs that they are of the same design, the effect of the whole is singularly varied and yet at the same time pleasing and elegant. The temples generally stand on a terrace a few feet high and from 10 to 15 feet wide. This is one of the characteristic features of Chalukyan design, and adds very considerably to the effect of their temples.

The buildings of this style are very numerous in the north and west of Mysore. The temple of Kodáresvara at Balagami is probably one of the oldest, and judging from the ruined and deserted temples at that place it must have been one of the richest museums of sculpture and architecture in Mysore. The temples at Kubattur also must at one time have been splendid buildings. Those at Arsikere, Harnhalli, Turvekere, Naglapura and numerous other places might be adduced as good examples of the style.

But it was to the munificence of the Hoysala Ballála kings, and to the genius of their gifted architects and sculptors, whom tradition declares to have been Jakanáchári and his son Dankanáchári, that the

Chalukyan style owed its fullest development and highest degree of perfection. The temples of Somnathpur, Belur and Halebid may be regarded as masterpieces of the style. The Belur temple was founded by Vishnu Varddhana after his renunciation of the Jain faith in 1117, and perhaps completed during his reign which ended in 1145. It appears, however, to have suffered injury at the time of the Muhammadan invasion in 1310, and was shut up till the reign of Harihara, probably the first Vijayanagar king of that name, who reigned 1336—1350. He repaired the temple, built the gopura and restored the endowments. If it was Harihara II who did this, it would be between 1379 and 1401. The Somnathpur temple was completed in 1270, and was erected by Soma or Somanátha, the general of the Hoysala king, who also founded the agrahára of Somnathpur. The Halebid temples are attributed to about the same period, or the reign of Vira Somesvara 1249—1268, and the larger one remained unfinished, owing probably to the Muhammadan conquest in 1310.* Of these the Belur temple is the only one that has not been abandoned, but owing to repairs and additions at various times the unity of design is somewhat marred.

It consists of a principal temple, surrounded by four or five others and numerous subordinate buildings, enclosed in a court by a high wall, measuring 360 feet by 440 feet, and having two very fine gateways or gopuras in its eastern front. The great temple consists of a very solid vimána, with an antarála, or porch; and in front of this a porch of the usual star-like form, measuring 90 feet across. The whole length of the temple, from the east door to the back of the cell, is 115 feet, and the whole stands on a terrace about 3 feet high, and from 10 feet to 15 feet wide. The arrangements of the pillars have much of that pleasing subordination and variety of spacing which is found in those of the Jains, but we miss here the octagonal dome, which gives such poetry and meaning to the arrangements they adopted. Instead of that, we have only an exaggerated compartment in the centre, which fits nothing, and though it does give dignity to the centre, it does it so clumsily as to be almost offensive in an architectural sense.

It is not, however, either to its dimensions, or the disposition of its plan, that this temple owes its pre-eminence among others of its class, but to the marvellous elaboration and beauty of its details. The effect of these, it is true, has been, in modern times, considerably marred by the repeated coats

* These dates and facts are taken from inscriptions, except for the Halebid temples, for the exact date of which no such authority has been obtained. Mr. Fergusson has been misled (p. 392) about the dates, putting down Somnathpura temple (on what authority is not stated) as erected in the time of Vinayaditya, who came to the throne in 1043.

of whitewash which the present low order of priests consider the most appropriate way of adding to the beauty of the most delicate sculptures. Notwithstanding this, however, their outline can always be traced, and where the whitewash has not been applied, or has been worn off, their beauty comes out with wonderful sharpness.

The richness and variety of pattern displayed in the windows of the porch are astonishing. These are twenty-eight in number, and all are different. Some are pierced with merely conventional patterns, generally star-shaped, and with foliated bands between; others are interspersed with figures and mythological subjects—for instance, the Varaha avatar, and other scenes connected with the worship of Vishnu, to whom the temple is dedicated. The pierced slabs themselves, however, are hardly so remarkable as the richly-carved base on which they rest, and the deep cornice which overshadows and protects them. The amount of labour, indeed, which each facet of this porch displays is such as, I believe, never was bestowed on any surface of equal extent in any building in the world; and though the design is not of the highest order of art, it is elegant and appropriate, and never offends against good taste.

The sculptures of the base of the vimana, which have not been whitewashed, are as elaborate as those of the porch, in some places more so; and the mode in which the undersides of the cornices have been elaborated and adorned is such as is only to be found in temples of this class. The upper part of the tower is anomalous. It may be that it has been whitewashed and repaired till it has assumed its present discordant appearance, which renders it certainly a blot on the whole design. My own impression rather is, that, like many others of its class, it was left unfinished, and the upper part added at subsequent periods. Its original form most probably was that of the little pavilions that adorn its portals, which have all the peculiar features of the style—the flat band on each face, the three star-like projections between, and the peculiar crowning ornament of the style. The plan of the great tower, and the presence of the pavilions where they stand, seems to prove almost beyond doubt that this was the original design; but the design may have been altered as it progressed, or it may, as I suspect, have been changed afterwards.

Somnathpur.—The building at Somnathpur is a single but complete whole. The temple is triple, the cells with their sikharas being attached to a square pillared hall, to the fourth side of which a portico, now in ruins, is attached, in this instance of very moderate dimensions. It is impossible without illustrations to give an idea of the elegance of outline and marvellous elaboration of detail that characterises these shrines. The temple stands on a raised terrace intended to correspond with the ground plan

of the temple, each of the numerous angles being supported by an elephant. The whole stands in a court-yard, surrounded by an open verandah, containing a cell between every set of columns. The exterior walls of the temple are carved with an elaborate profusion of detail, the arrangement of the subjects being similar to that at Halebid described farther on. The small canopies with pendants, which cover each compartment of the antarāla, are all, like those of the Balagami temples, carved with a different design, on which the architect has expended the utmost fertility of his skill.

Halebid.—The Belur and Somnathpur temples were dedicated to Vishnu under his denomination of Keshava; the Halebid temples were sacred to Siva under the respective forms of Kaitabhesvara and Hoysalesvara. The first only was completed, and was a perfect gem of art.

Its plan was star shaped, with sixteen points, and it had a porch well proportioned in size. Its roof was conical, and from the basement to the summit it was covered with sculptures of the very best class of Indian art, and these so arranged as not materially to interfere with the outlines of the building, while they imparted to it an amount of richness only to be found among the specimens of Hindu art. If it were possible, adds Mr. Fergusson, to illustrate this little temple in anything like completeness, there is probably nothing in India which would convey a better idea of what its architects were capable of accomplishing.*

It is, however, surpassed in size and magnificence by its neighbour, the great temple at Halebid, which, had it been completed, is one of the buildings on which the advocate of Hindu architecture would desire to take his stand. Unfortunately it never was finished, the works having been stopped by the Muhammadan conquest in 1310 A. D., after they had been in progress apparently for eighty-six years.

The general arrangements of the building are that it is a double temple. If it were cut into halves, each part would be complete, with a pillared porch of the same type as that at Belur, an antarāla or intermediate porch, and a sanctuary containing a lingam, the emblem of Siva. Besides this, each half has in front of it a detached pillared porch as a shrine for the bull Nandi. Such double temples are by no means uncommon in India, but the two sanctuaries usually face each other and have the porch between them. Its dimensions

* This exquisite specimen of the most ornate Chalukyan style of architecture is—with shame be it written—a thing of the past. Mr. Fergusson's gloomy anticipations (p 397) have been completely fulfilled. The trees which had rooted themselves in the vimāna were suffered to do their work unchecked, and the building is now a hideous heap of ruin. Some of the most perfect figures have been conveyed to Bangalore and set up in the Museum, but divorced from their artistic setting they have lost their meaning.

may roughly be stated as 200 ft. square over all, including all the detached pavilions. The temple itself is 160 feet north and south, by 122 feet east and west. Its height, as it now remains, to the cornice is about 25 feet from the terrace on which it stands. It cannot, therefore, be considered by any means as a large building, though large enough for effect. This, however, can hardly be judged of as it now stands, for there is no doubt but that it was intended to raise two pyramidal spires over the sanctuaries, four smaller ones in front of these, and two more, one over each of the two central pavilions. Thus completed, the temple, if carried out with the richness of detail exhibited in the Kaitabhesvara, would have made up a whole which it would be difficult to rival anywhere.

The material out of which this temple is erected is an indurated potstone of volcanic origin, found in the neighbourhood. This stone is said to be soft when first quarried, and easily cut in that state, though hardening on exposure to the atmosphere. Even this, however, will not diminish our admiration of the amount of labour bestowed on the temple; for, from the number of parts still unfinished, it is evident that like most others of its class, it was built in block and carved long after the stone had become hard. As we now see it the stone is of a pleasing creamy colour and so close-grained as to take a polish like marble. The pillars of the great Nandi pavilion, which look as if they had been turned in a lathe, are so polished as to exhibit what the natives call a double reflection—in other words to reflect light from each other. The enduring qualities of the stone seem to be unrivalled, for, though neglected and exposed to all the vicissitudes of a tropical climate for more than six centuries, the minutest details are as clear and sharp as the day they were finished. Except from the splitting of the stone arising from bad masonry, the building is as perfect as when its erection was stopped by the Muhammadan conquest.

The building stands on a terrace, ranging from 5 ft. to 6 ft. in height, and paved with large slabs. On this stands a frieze of elephants, following all the sinuosities of the plan and extending to some 710 ft. in length, and containing not less than 2,000 elephants, most of them with riders and trappings, sculptured as only an oriental can represent the wisest of brutes. Above these is a frieze of shórdúlas, or conventional tigers—the emblems of the Hoy-sala Ballálas who built the temple. Then comes a scroll of infinite beauty and variety of design; over this a frieze of horsemen and another scroll; over which is a bas-relief of scenes from the Ramayana, representing the conquest of Ceylon and all the varied incidents of that epic. This, like the other, is about 700 ft. long. (The frieze of the Parthenon is less than 550 ft.) Then come celestial beasts and celestial birds, and all along the east front a frieze of groups from human life, and then a cornice, with a rail, divided into panels,

each containing two figures. Over this are windows of pierced slabs, like those of Delur, though not so rich or varied. In the centre, in place of the windows, is first a scroll, and then a frieze of gods and heavenly *apsaras*—dancing girls and other objects of Hindu mythology. This frieze, which is about 5 ft. 6 in. in height, is continued all round the western front of the building, and extends to some 400 ft. in length. Siva, with his consort Parvati seated on his knee, is repeated at least fourteen times; Vishnu in his nine *avatars* even oftener. Brahma occurs three or four times, and every great god of the Hindu pantheon finds his place. Some of these are carved with a minute elaboration of detail which can only be reproduced by photography, and may probably be considered as one of the most marvellous exhibitions of human labour to be found even in the patient East.

It must not, however, be considered that it is only for patient industry that this building is remarkable. The mode in which the eastern face is broken up by the larger masses, so as to give height and play of light and shade, is a better way of accomplishing what the Gothic architects attempted by their transepts and projections. This, however, is surpassed by the western front, where the variety of outline, and the arrangement and subordination of the various facets in which it is disposed, must be considered as a masterpiece of design in its class. If the frieze of gods were spread along a plain surface it would lose more than half its effect, while the vertical angles, without interfering with the continuity of the frieze, give height and strength to the whole composition. The disposition of the horizontal lines of the lower friezes is equally effective. Here again the artistic combination of horizontal with vertical lines, and the play of outline and of light and shade, far surpass anything in Gothic art. The effects are just what mediæval architects were often aiming at, but which they never attained so perfectly as was done at Halebid.

Before leaving Halebid, it may be well again to call attention to the order of superposition of the different animal friezes. As in the rock-cut monastery described by the Chinese pilgrims, so here, the lowest were the elephants; then the lions; above these came the horses; then the oxen; and the fifth storey was in the shape of a pigeon. The oxen here are replaced by a conventional animal, and the pigeon also by of a bird of a species that would puzzle a naturalist. The succession, however, is the same, and the same five genera of living things form the ornaments of the moonstones of the various monuments in Ceylon. Sometimes in modern Hindu temples only two or three animal friezes are found, but the succession is always the same, the elephants being the lowest, the next above them are the lions, and then the horses, &c. When we know the cause of it, it seems as if this curious selection and succession might lead to some very suggestive conclusions. At pre-

sent we can only call attention to it in hopes that further investigation may afford the means of solving the mystery.

If it were possible to illustrate the Halebid temple to such an extent as to render its peculiarities familiar, there would be few things more interesting or more instructive than to institute a comparison between it and the Parthenon at Athens. Not that the two buildings are at all like one another; on the contrary, they form the two opposite poles—the alpha and omega of architectural design; but they are the best examples of their class, and between these two extremes lies the whole range of the art. The Parthenon is the best example we know of pure refined intellectual power applied to the production of an architectural design. Every part and every effect is calculated with mathematical exactness, and executed with a mechanical precision that never was equalled. All the curves are hyperbolas, parabolas, or other developments of the highest mathematical forms—every optical defect is foreseen and provided for, and every part has a relation to every other part in so recondite a proportion that we feel inclined to call it fanciful, because we can hardly rise to its appreciation. The sculpture is exquisitely designed to aid the perfection of the masonry—severe and godlike, but with no condescension to the lower feelings of humanity.

The Halebid temple is the opposite of all this. It is regular, but with a studied variety of outline in plan, and even greater variety in detail. All the pillars of the Parthenon are identical, while no two facets of the Indian temple are the same; every convolution of every scroll is different. No two canopies in the whole building are alike, and every part exhibits a joyous exuberance of fancy scorning every mechanical restraint. All that is wild in human faith or warm in human feeling is found portrayed on these walls; but of pure intellect there is little—less than there is of human feeling in the Parthenon.

The great value of the study of these Indian examples is that it widens so immensely our basis for architectural criticism. It is only by becoming familiar with forms so utterly dissimilar from those we have hitherto been conversant with, that we perceive how narrow is the purview that is content with one form or one passing fashion. By rising to this wider range we shall perceive that architecture is as many-sided as human nature itself, and learn how few feelings and how few aspirations of the human heart and brain there are that cannot be expressed by its means. On the other hand, it is only by taking this wide survey that we appreciate how worthless any product of architectural art becomes which does not honestly represent the thoughts and feelings of those who built it, or the height of their loftiest aspirations.

Malnad.—The temples of the Malnad regions in the west are of a totally different style, corresponding to that of Canara. The frame work is of wood, standing on a terrace of laterite, and the whole covered with a tiled and gabled roof. The wooden pillars and joists are often well carved, but not in the highest style of art. The best specimens of this order of architecture must most probably be sought beyond the western limits of Mysore.

Saracenic style.—The best examples of Saracenic architecture in Mysore are to be found at Sira, and are doubtless to be classed under the Mogul style. It is true that the Pathan state of Bijapur, distinguished for its architecture, was the first Musalman power that subdued the north and east, but the governors of its Carnatic possessions being Mahrattas, no buildings of note seem to have been erected in the Pathan style. Bijapur was taken by the Moguls under Aurangzib in 1687, and the subjection of the Carnatic provinces belonging to it immediately followed, ending in the establishment of Sira as the capital of the new territory acquired in Mysore.

The architectural remains now existing are the Jumma Masjid at Sira, and several tombs, partly ruined, both at Sira and Goribidnur, with the remains of a large A'shur khána at Dod Ballapur. The domes at Sira are not large, but of a very light and elegant design, being well raised on a sort of floral cup, the petals of which press close round the base. These structures have survived through being of stone. It is on record that a palace was erected by one of the governors, named Dilavar Khan, of such elegance that it was adopted as the model on which Haider and Tippu built their palaces at Bangalore and Seringapatam. But all three were of such perishable materials, though richly decorated with gilding and colour, that hardly anything now remains of either of them.* We have, however, some buildings of the latter period still

* Parts of the palace at Seringapatam now form the sindal koti. The Bangalore palace was used for the offices of the administration until a few years ago, when, being no longer safe, it was abandoned and has since been demolished.

Of the former, Buchanan says that it was a very large building, surrounded by a massy and lofty wall of stone and mud; and though outwardly of a mean appearance, containing some handsome apartments, but ill ventilated. The private apartments of Tippu formed a square, in one side of which were the rooms that he himself used. The other three sides of the square were occupied with warehouses, in which he had deposited a vast variety of goods; for he acted not only as a prince but also as a merchant. These goods were occasionally distributed among the amilars with orders to sell them, on the Sultan's account, at a price far above their real value; which was done by forcing a share of them upon every man in proportion to his supposed wealth.

The apartment most commonly used by Tippu was a large lofty hall, open in front after the Musalman fashion, and on the other three sides entirely shut up from ventilation. From the principal front of the palace, which served as a revenue office, and as a place from whence the Sultan occasionally shewed himself to the populace, the chief entry into the private square was through a strong

maintained in good order. They are the Makbara or mausoleum of Haidar's family at Kolar, the great mosque at Seringapatam, with the Gumbaz or mausoleum of Haidar and Tippu in the Lal Bagh at the same place, and the summer palace known as the Darya Daulat. There are also tombs at Channapatna and a mosque at Nagar.

The mausoleum of Haidar and Tippu is an effective building. The central apartment containing the tombs is covered with a great dome, and is surrounded with a verandah supported on pillars of polished hornblende, the inner entrance being enriched with doors of ebony inlaid with ivory, the gift of Lord Dalhousie. The same Governor General, on his visit to Mysore in 1855, directed the restoration and repair of the Darya Daulat, then falling to decay, in commemoration of its having been the residence of the great Duke of Wellington. An account of it will be found under Seringapatam in Vol. II.

Lingayats.—The Lingayats have adopted what seems to me a somewhat distinctive style in their public buildings, such as mathas, tombs, &c., which is a combination of the Hindu and Saracenic. The best specimens perhaps are the tombs of the Coorg Rajas at Mercara, but there are buildings at Nagar, Chitaldroog, Nayakanhatti and other places which may serve as illustrations.

In connection with Hindu architecture may be mentioned the rude but substantial and durable bridges across the Kaveri at Seringapatam and at Sivasamudram. The latter are said to be 700 years old. The former was erected under the regency of Purnaiya, and by him named, as stated in an inscription at the place, the Wellesley Bridge, in honour of the then Governor General. It is composed, as also is the other, of rough stone pillars, firmly let into the rocky bed of the stream. These support stone brackets, on which rest the stones forming the framework of the bridge, upon which again the floor of the roadway is laid.

Of Anglo Indian architecture perhaps the less said the better. Yet there are structures deserving of remark. Among these is the de Havilland arch at Seringapatam. This engineer officer seems to have

narrow passage, wherein were chained four tigers. Within these was the hall in which Tippu wrote, and into which very few persons except Mir Salak were ever admitted. Immediately behind this was the bed chamber, which communicated with the hall by a door and two windows, and was shut up on every other side. The door was strongly secured on the inside, and a close iron grating defended the windows. The Sultan, lest any person should fire upon him while in bed, slept in a hammock which was suspended from the roof by chains in such a situation as to be invisible through the windows. The only other passage from the private square was into the zenana or women's apartments.

been of somewhat erratic genius. He proposed, however, the construction of a brick arch, of a span greatly exceeding anything that had at that time been attempted, and on his design being set aside as visionary, resolved to demonstrate its practicability, and thus built the great arch across the garden attached to his own house, where it still stands as a monument of his skill. I suspect the large room without pillars (said to be one of the largest in south India) of the Residency at Mysore may have been designed by him. But as a rule it is perhaps not too much to say that in public no less than in private buildings erected under European direction all pretensions to architecture have been ignored as being totally unconnected with engineering. Of late, however, under Colonel Sankey as Chief Engineer, more attention has been paid to this point, and several effective buildings have been erected, those on the largest scale being at Bangalore.

Engraving.—Of the art of engraving the best examples are to be found in the numerous inscriptions on copper or stone scattered over the country. The oldest on stone (as at Begur and Srinivasapur) are deeply and heavily cut, on ponderous and massive slabs, as if by the hands of a giant race. But the Chera grants on copper of the 5th and 8th centuries are more artistically incised, both as to form and execution. So also the inscriptions on the Gomatesvara colossus. With the Chalukyas the style improves, and later on the Cholas covered some of the eastern temples with inscriptions in old Tamil deeply and well cut. But it is under the Hoysala Ballálas that we find the most perfect specimens. Their inscriptions on beautifully polished slabs of hornblende are masterpieces of the art. The letters are of ornamental design, varied to suit their positions, and the whole so well fitted and harmonized together that no space is left where a single additional letter could be introduced.

Wood carving.—Mysore is famous for its ornamental sandal-wood carving. It is done by a class called Gúdigar, who are settled in the Shimoga District, chiefly at Sorab. The designs with which they entirely cover the boxes, desks and other articles made, are of an extremely involved and elaborate pattern, consisting for the most part of intricate interlacing foliage and scroll work, completely enveloping medallions containing the representation of some Hindu deity or subject of mythology, and here and there relieved by the introduction of animal forms. The details, though in themselves often highly incon-

gruous, are grouped and blended with a skill that seems to be instinctive in the East, and form an exceedingly rich and appropriate ornamentation, decidedly oriental in style, which leaves not the smallest portion of the surface of the wood untouched. The material is hard, and the minuteness of the work demands the utmost care and patience. Hence the carving of a desk or cabinet involves a labour of many months, and the artists are said to lose their eye-sight at a comparatively early age. European designs they imitate to perfection.

Industrial Arts.

The most generally practised industrial arts, of native growth, are those connected with metallurgy, pottery, carpentry, tanning, glass making, the production of textile fabrics or the raw material for them, rope making, the expression of oil and saccharine matter, and the manufacture of earth salt. Other arts have doubtless sprung up in the large centres of population, chiefly in connection with the wants of Europeans or under their instruction, but the above are the principal ones extensively practised among the people.

Iron and Steel.—The metal most widely diffused and generally wrought is iron. It is obtained both from ore and from black iron-sand. The iron ore is obtained in small irregular masses by digging a few feet below the surface, generally on low rocky hills, but in some places in the fields. The small masses are generally mixed with clay and sand, which is separated by beating to powder and washing. The ore is of two kinds, one efflorescing into red ochre, the other into yellow. The stones which are too hard to be broken up are called male, while those which being in a state of decay yield to the hammer are called female. The collectors of the ore convey it on either asses or buffaloes to the smelting furnaces. The black sand is found in the rainy season in the nullas or channels formed by torrents from certain hills. The principal places where iron is smelted are in Magadi, Chiknayakanhalli, Malvalli, Heggadadevankote and Harnhalli taluks, and in the southern and central parts of Chitaldroog District, and the eastern parts of Shimoga and Kadur Districts. An iron foundry on a considerable scale has been established at Bangalore.

Iron smelting is performed in furnaces, the heat of which is fed by a pair of bellows formed of whole buffalo hides, worked by hand. The process commen-

ces with filling the furnace with charcoal. After it is heated, which requires an hour, a basket of ore, containing about 33 lbs., reduced to pieces the size of a filbert or pea, is put into the funnel and covered with charcoal: an hour afterwards a similar basketful of ore is put in, and this addition repeated three times at the stated intervals, care being taken that it is always covered with charcoal and the furnace supplied with a sufficient quantity of this article. After the third addition of ore, a small hole is made at the lowest extremity of the furnace to let out the dross. About an hour after the last replenishment, the process is finished, which lasts altogether from five to six hours.

After the charcoal has been consumed, the temporary part of the furnace is pulled down, and the iron collected at the bottom of it is taken out with a long forceps, carried to a small distance, and beaten with large wooden clubs. During this operation a great quantity of scoræ are seen running from the porous mass of iron. When the red heat is nearly over, it is cut into three pieces. In this state it is very porous, and worse in appearance than any crude iron of European manufacture. To prepare it for the market, it is several times heated to whiteness, cut into thirteen pieces of about 2 lb. each, and hammered into cylindrical pieces of eight inches in length. It is in this state a good soft iron, answering all purposes for which it is wanted in cultivation and building. The maund of this iron (27 lb.) is sold for about two rupees.

In order to convert the iron into steel, each piece is cut into three parts, making fifty-two in the whole, each of which is put into a crucible, together with a handful of the dried branches of tanga-li (*cassia auriculata*), and another of fresh leaves of vonangadi (*convolvulus laurifolia*). In some parts the iron is heated, hammered and reduced into pieces of 8 inches long, 2 inches broad and half an inch thick, before putting into the crucible. The mouth of the crucible is then closely shut with a handful of red mud, and the whole arranged in circular order, with their bottoms turned toward the centre, in a hole made on the ground for the purpose. The hole is then filled up with charcoal, and large bellows are kept blowing for six hours, by which time the operation is finished. The crucibles are then removed from the furnace, ranged in rows on moistened mud, and water is thrown on them whilst yet hot. The steel is found in conical pieces at the bottom of the crucibles, the form of which it has taken. The upper or broader surfaces often striated from the centre to the circumference.

In some crucibles half of the iron only is converted into steel, and others are found empty, the smelted metal having run through a crack in the crucible. This is smelted again and sold for making fireworks. The conical pieces are sold at the price of 100, or 15 lbs. per about Rs. 3½, or the maund of 27 lbs. per Rs. 5 to Rs. 5½. Sometimes they are heated again and hammered into small bars of four or five inches long.

It is probably not quite indifferent what crucibles are used in this operation: at all events they must be able to stand a strong fire. The loam employed for these crucibles is of a brown red colour, and is probably derived from the decomposition of the greenish slaty rock of the neighbouring hills. It is of an earthy appearance and crumbles between the fingers; mixed with white sand and some shining particles; it has no earthy smell when breathed upon, nor effervesces with acids. From this the finer particles used for crucibles are separated by water, which keeps them suspended for some time, during which it is drawn off and left to deposit them. The dried sediment of many of these washings is compact, has a liver brown colour, with some shining particles; of the consistence of chalk; a conchoidal fracture, feels soft and soapy, and takes a polish from the nail. It makes a pretty good brown paint. Of this the crucibles are made, by moistening it and mixing it with the husks of rice. It is then dried in the open air.

The stone used in the construction of the fire-places of the iron and steel furnaces is called *balapam* by the natives; a name applied to all stones of the magoesian order, which have a soapy and greasy feel, and little hardness.

The principal point of making steel by fusion seems to consist in the exclusion of atmospheric air from the crucible, and the use of fresh vegetables instead of charcoal, by which means it is probable a higher temperature is obtained than could easily be procured by the use of common charcoal. Hence the iron is more certainly fused and at a smaller expense. The grain of the steel is much finer than that of the ore; but there still appear spots which are not well fused.

An instrument maker in England, consulted by Dr. Heyne regarding wootz or Indian steel, expressed the following opinion.

‘In the state in which it is brought from India it is not perfectly adapted for the purpose of fine cutlery. The mass of metal is unequal, and the cause of inequality is evidently imperfect fusion: hence the necessity of repeating this operation by a second and very complete fusion. I have succeeded in equalizing it, and I now have it in a very pure and perfect state, and in the shape of bars like English cast steel. If one of these is broke by a blow of a hammer, it will exhibit a fracture that indicates steel of a superior quality and high value, and is excellently adapted for the purpose of fine cutlery, and particularly for all edge instruments used for surgical purposes. A very considerable degree of care and attention is required on the part of the workmen employed on making steel; the metal must on no account be over heated, either in forging or hardening; the fire ought to be charcoal or good coke.

The art of hardening and tempering steel is admitted, by all who have attended to the subject, to be of vast importance; the excellence of the instru-

ment depending in a great measure on the judgment and care with which this is performed. I find the Indian steel to be extremely well hardened when heated to a cherry-red colour in a bed of charcoal-dust, and quenched in water cooled down to about the freezing point. In the process of tempering, a bath of the well known fusible mixture of lead, tin, and bismuth, may be used with advantage; linseed-oil will also answer the purpose, or, indeed, any fluid whose boiling point is not below 600 degrees. The temper is to be ascertained by a thermometer, without any regard to the colours produced by oxidation. It is worthy of notice, that an instrument of Indian steel will require to be tempered from 40 to 50 degrees above that of cast steel. For example, if a knife of cast steel is tempered when the mercury in the thermometer has risen to 450, one of Indian steel will require it to be 490; the latter will then prove to be the best of the two, provided always that both have been treated by the workman with equal judgment and care.

‘Upon the whole, the steel of India promises to be of importance to the manufactures of this country. But the trouble and expense of submitting it to a second fusion will, I fear, militate against its more general introduction. If the steel makers of India were made acquainted with a more perfect method of fusing the metal, and taught to form it into bars by the tilt hammers, it might then be delivered here at a price not much exceeding that of cast steel.’

Steel is made especially in Heggadadevankote, Malvalli, Kortagiri and Madgiri taluks. Steel wire drawing is performed at Channapatna for the purpose of providing strings for musical instruments, and of a quality which makes the wire sought after throughout southern India.

The mode of preparing the steel before it is drawn into wire is by taking any quantity and heating it in a charcoal fire until it is red hot; when it is taken out, beaten into a long thin plate upwards of an inch in breadth, and rolled up into an oval or round form, leaving a small space between each of the folds. It is then put into the fire again, well heated, and hammered out as before. This process is repeated eight times, by which the weight of the steel is reduced to one-fifth of the original quantity.

When this is done it is ready for being formed into wire, and is again heated and beaten into slender rods, with a stroke alternately on either side, which gives them a wavy appearance. The rod being heated again is stretched round a wooden post, and then drawn through a small hole in a plate of common steel into wire by means of pincers. In this plate there are several holes of various dimensions for the purpose of gradually reducing the wire to the size required. After it has

been once drawn, it is necessary to heat it again before it can be drawn a second time, which is done through a hole somewhat smaller than the former one. It afterwards requires no further heat, but is drawn eight or ten times more until it is sufficiently fine, and this is partly ascertained by the sound it gives when struck by the finger on being stretched out. At the time of drawing it through the plates a small quantity of oil is applied to it to make it pass easily.

The number of so called iron mines is 237, and there are 1,359 furnaces for the manufacture of iron, but the numbers are subject to slight variation from year to year. The following statistics shew the quantity produced and the value of the manufactures for eight years.

Year.	No. of mines and furnaces.	Quantity produced Maunds of 28 lbs.	Duty levied on furnaces, Rs.	Value of iron manufactures, Rs.
1868—69	1,457	21,078		
1869—70	1,421	17,983		
1870—71	1,450	25,193		247,044
1871—72	1,444	21,333	8,700	132,752
1872—73	1,472	20,114	8,187	143,600
1873—74	1,464	19,298	8,065	148,120
1874—75	1,493	23,468	8,140	229,220
1875—76	...	...	...	206,069

Brass and Copper.—The manufacture of brass and copper water and drinking vessels is to a great extent in the hands of the Jains, one of the chief seats of the manufacture being at Sravan Belgola. Brass is also used for making lamp stands, musical instruments, and images of the gods ; and bell metal for the bells and gongs used in temples and in religious services, and by mendicants. The value of the brass and copper manufactures is thus given.*

1868—69	...	Rs. 58,900	1872—73	...	Rs. 273,390
1869—70	...	" 72,400	1873—74	...	" 305,083
1870—71	...	" 72,400	1874—75	...	" 378,880
1871—72	...	" 267,262	1875—76	...	" 332,050

Gold and Silver.—Gold and silver are employed to a very large extent in making jewelry and ornaments, the most favourite method with natives of investing their savings, what is not turned to account in this way being frequently buried. A very small quantity of gold is obtained in the country, from 2 to 3 seers a year, from washings of the alluvial soil, chiefly in the south of the Kolar District. But some mining operations have been recently commenced as described at p. 18 and 35.

* It may be as well to state here that, although the figures are taken from the only statements available, these and similar statements in this chapter cannot be relied on. It is evident that before 1871—2 they are mostly altogether wrong, but I have thought it better to give what statistics were procurable.

The purity of gold is distinguished by its colour. Pure gold is of the twelfth colour, and whatever is wanting to make up 12 is to be considered as alloy. Thus gold of the 11th colour means a metal composed of 11 parts of gold and one part of alloy. The mode of purifying gold is to take equal quantities of brick dust and common salt, a good handful, which is put between two pieces of potter's ware and into it the gold. These are placed in the midst of a heap of dried cow-dung (vratties), and lighted at top in a place where the wind cannot produce a strong fire. The pieces of gold when taken out appear incrustated with a black crust, which must be removed, and the process as often repeated as the same is reproduced.

The following are some of the ordinary gold and silver ornaments worn by the people :—

Rāgaṭe—circular ornaments worn by women at the crown of the head.

Kyādige—crescent shaped ornaments worn at the back of the head.

Jeṭe bille—smaller ones worn on the plait which hangs down the back.

Chauri kuppe—ornamental pins for the hair, with a bunch of chauri hair attached for stuffing the chignon or plait.

Bāvali—earrings for the upper rim of the ear.

Vāle, vāle—earrings to fill the large hole in the lobe of the ear.

Padaka—a pear shaped drop worn generally on the forehead.

Aḍḍike, Gundina sara—necklaces.

Kankani—bracelets.

Vanki, Nāgamurige, Tōlu tāyiti, Bandi—bracelets worn by women above the elbow.

Bājuband—armlets or broad belt like ornaments worn by women above the elbow.

Dābu—a broad flat zone or hoop for the waist worn by women, generally silver.

Lūḷi, Ruḷi, Kālsarpini—anklets (silver).

Kālu-geḷe—small round silver bells worn with anklets, especially by children.

Pilli—silver toe rings.

Uḍḍihāra—silver chains worn by men round the waist.

Karaḍige—silver shrine containing the linga worn by Lingayats.

Tāyiti—small silver money boxes attached to the girdle.

Suṇṇa kāyi—an egg shaped silver chunam box.

Gold and silver thread and lace for ornamenting different fabrics are made in Bangalore, and electro plating is also done here.

A kind of false gilding was formerly used in the decoration of the palaces at Seringapatam. It consisted of paper covered with the false gilding, which was cut into the shape of flowers and pasted on the walls or columns, the interstices being filled up with oil colours. The manner of making this false gilded paper was as follows :—

Take any quantity of lead, and beat it with a hammer into leaves, as thin as possible. To 24 parts of these leaves add 3 parts of English glue, dissolved in water, and beat them together with a hammer till thoroughly united;

which requires the labour of two persons for a whole day. The mass is then cut into small cakes and dried in the shade. These cakes can at any time be dissolved in water and spread thin with a hair brush on common writing paper. The paper must then be put on a smooth plank and rubbed with a polished stone till it acquires a complete metallic lustre. The edges of the paper are then pasted down on the board and the metallic surface is rubbed with the palm of the hand, which is smeared with an oil called *gurna*, and then exposed to the sun. On the two following days the same operation is repeated: when the paper acquires a metallic yellow colour.

The *gurna* oil is prepared as follows: Take $\frac{3}{4}$ of maund (about 18 lb.) of *agase yenne* (linseed oil), $\frac{1}{2}$ a maund (12 lb.) of the size called *chandarasa*, and quarter of a maund (6 lb.) of *musambra* or aloes prepared in the country. Boil the oil for two hours in a brass pot. Bruise the *musambra*, and having put it into the oil, boil them for four hours more. Another pot having been made red-hot, the *chandarasa* is to be put into it and will immediately melt. Take a third pot, and having tied a cloth over its mouth, strain into it the oil and *musambra*: these must be kept in a gentle heat and the *chandarasa* added them gradually. The oil must be strained again and it is then fit for use. The *chandarasa* is prepared from the milky juice of any of the following trees—*ficus glomerata*, *goni*, *bela*, *bevina*, *gobali*, &c: it is therefore an elastic gum.

Textile Manufactures.—These are of cotton, wool, and silk; and the following are the estimated values of the fabrics annually produced under each head for the past eight years.

Fabrics of—	Cotton.	Wool.	Silk.
1868—69 Rs.	714,623	91,330	...
1869—70	761,595	103,125	...
1870—71	761,595	103,125	514,640
1871—72	1,124,914	190,406	426,140
1872—73	1,025,380	188,363	423,600
1873—74	866,393	241,825	168,030
1874—75	159,446	189,127	133,080
1875—76	163,465	328,127	128,800

Cotton.—The spinning of cotton into yarn or thread is the occupation of large numbers of women of the lower orders. But before the cotton is ready for the spinning wheel, it is cleaned or separated from the seed by passing through a rude gin, and then, as it is too lumpy for spinning, it is fluffed up with a bow, which is the special occupation of a class of Musalmans called *Pinjari*. It is then carded into rolls handy for the spinner. The wheel is turned by means of a handle with the right hand, whilst with the left, which holds the cotton, the thread is spun on to

the reel. After the bobbin is full, the yarn is rewound on to a swift. This is done by placing the axle of the swift perpendicularly on the ground, and keeping it in rapid motion by a touch with the third and fourth fingers of the left hand. The thread is then reeled off on to a bigger reel, and finally into a large skein, by passing round five small stakes set up in the ground in the form of a square. The skein is next dressed for the loom. The requisite number of threads is fastened firmly to fixed points, and being separated by small sticks, is supported by cross sticks. The cleaner then takes a brush of cocoa-nut fibre, and dipping it in a preparation of flour and water, passes it steadily up and down the entire length of the skein, using at the same time one of the small dividing sticks to facilitate the operation.

The loom is placed over a kind of well or hole, large enough to contain the lower portion of the machinery, which is worked on the pedal principle, with the toes, the weaver sitting with his legs in the hole for the purpose. The combs are supported by ropes attached to beams in the roof, working over pulleys, and stretching down into the well to the toes of the weaver. In his right hand is the shuttle, which contains the thread, and which, passed rapidly through the spaces created by the combs, forms the pattern. The principal comb is held in the left hand. As the cloth is manufactured it is wound on the beam, by slightly easing the rope on the right hand and turning round the lever.

Particulars will be found under each District, in Vol. II, of the cotton fabrics manufactured in the various localities.

Of *Woollen fabrics* the *kambli* or camblet is an indispensable article of covering for almost all classes. Its manufacture is a characteristic industry more especially of the Chitaldroog District. For the finest kinds, the best of which are of very high value (see Vol. II), and rarely made except to order, the fleece from the first shearing must be used. This is taken from the sheep when about six months old. Every successive fleece becomes coarser and does not increase in quantity. The wool is commonly black, and the deeper this colour the more valuable the wool is reckoned. The fleece is shorn twice a year, in the second month after the shortest day, and in that which follows the summer solstice.

Before the sheep are shorn they are well washed. The wool, when it has been shorn, is teased with the fingers, and then beaten with a bow like cotton, and formed into bundles for spinning. This operation is performed both by men

and women, partly on the small cotton wheel and partly with the distaff. Some tamarind seeds are bruised; and after having been infused for a night in cold water, are boiled. The thread when about to be put into the loom is sprinkled with the cold decoction. The loom is of the same simple structure as that for cotton weaving. The new made cloth is washed by beating it on a stone; and when dried it is fit for sale. The high price of the finer kinds is thus evidently owing to the great trouble required in selecting wool sufficiently fine, the quantity of which in any one fleece is very small.

The carpets of Bangalore are well known for their durable quality, and for the peculiarity of having the same pattern on both sides. The pile carpets made in the Central Jail from Persian and Turkish designs are probably superior to any other in India.

Silk fabrics, of stout texture and excellent designs, are made, chiefly by Paṭvegārs and Khātris, in Bangalore and at Molakalmuru. Women of the wealthier classes are often richly attired in silk cloths on ceremonial or festival occasions. Particulars regarding the rearing of silk-worms, the reeling or filature of raw silk, and the manufacture of fabrics are contained in Vol. II.

Dyes.—In connection with the foregoing textile fabrics may be mentioned the dye stuffs used to produce different colours.

Woollen dyes.—Blues, from indigo; yellow, from turmeric; red, from sanders wood and lac; browns, from popli chakke; orange, purple, and green, by mixing the primitive colour stuffs; rose and magenta, from aniline dye; crimson and dark red, from red-wood and lac; scarlet, from red-wood and tin mordant.

Silk dyes.—From suringi (*calysaccion longifolium*) are obtained red and crimson, used with two parts of pesti pods by boiling. From kamala powder (*rottilera tinctoria*, Kan. *kapila puḍi*) are obtained the following—blue, for bleached silk, by maceration in cold solution of indigo; black, by steeping again with alum and iron mordants; greens, for yellow thread steeped in indigo solution. From safflowers (*carthamus tinctorius*, Kan. *kusumba*) yellow and pink for red thread steeped in indigo solution.

Cotton dyes.—From Indian madder (*rubia munjista*, Kan. *munjista*) are obtained pink, crimson, lake, and orange. Native dyers use it commonly for red colour by boiling with alum. From chay root (*oldenlandia umbellata*, Kan. *chiri veru*) are obtained red, orange, and purple. It is very extensively used for red dye by the native dyers. The process varies to some extent in obtaining the evanescent and permanent colours. From morinda bark (*morinda umbellata*, Kan. *maddi chakke*) is obtained red, by boiling with milk-hedge ash-

es. The colour is dull, yet it is considered faster than the brighter colours obtained from other substances. The best dye is procured from the bark of the roots of trees three years old. From popli stem (*ventilago madraspatana*, Kan. *popli chakke*) is obtained brown. The bark of the root is used also for orange dye. With chay root it forms a rich chocolate colour, and with galls black; used by oiling and steeping, with or without alum. From myrabolan (*terminalia chebula*, Kan. *alale kuyi*) used with other stuffs, is obtained yellow and black, by maceration and boiling. The three kinds of myrabolans yield, with alum a good durable yellow, and with salts of iron a black colour, commonly used for tanning purposes. From babool bark (*acacia arabica*, Kan. *mugali chakke*) are obtained buff and fawn, by boiling. From indigo seeds (Kan. *tagasi bija*) is obtained an adjunct for blue dye. From annatto (*bixa orellana*, Kan. *ranga mûlike*) and from mara manjil (*coccinium fenestratum*, Kan. *marara arisina*) is obtained yellow. From cassia flowers (*cassia auriculata*, Kan. *tâvarike huvu*) is obtained blue. It is also an adjunct for yellow dye. From cochineal (*coccus cacti*, Kan. *kirimanji hula*) red and scarlet are obtained.

Other dyes.—From indigo (*indigofera tinctoria*, Kan. *nîli*) is obtained blue and its shades, green, purple and black, by maceration in solutions. From turmeric (*curcuma longa*, Kan. *arisina*) yellow and orange, by boiling with alum mordant. From sanders wood (*pterocarpus santalinus*, Kan. *patanga*) red, crimson, scarlet, orange, and purple, by boiling with alum or tin: from poras flower (*butea frondosa*, Kan. *mutugada huvu*) yellow, green, and orange, by steeping in: with the addition of a little soda it turns to orange. From lac (*coccus lacca*, Kan. *aragu*) red, crimson and scarlet, by steeping. From log wood (*hæmatorhylon campechianum*) red and black, by boiling. From tugra seeds (*cassia tora*, Kan. *tangadi bija*) blue, used as an adjunct to green and yellow. Cassan leaves (*memecylon tinctoria* Kan. *ulli yele*) are used in red colours by boiling with alum.

Goni.—In many parts of the country, *goni* is a considerable article of manufacture. It is a coarse, but very strong sack-cloth, from 18 to 22 cubits in length, and from $\frac{1}{2}$ to $\frac{3}{4}$ of a cubit broad, and is made from *pundi*, the *jamupa* or *crotalaria juncea*. It is divided into three kinds, which differ in value according to their strength, and to the closeness of the fabric. The same people, who are a particular caste of men, cultivate the plant and carry on the manufacture. After being cut down, the plant is dried in the sun and tied up in bundles, which are taken out as wanted and put in the water, at which time their bands are cut, and the stems being opened out, are kept down to the bottom by stones or mud. According to circumstances they require to be kept in the water

from six to eight days. They are known to be ready when the bark separates easily from the pith. It is then taken out of the water, and a man, taking it up by handfuls, beats them on the ground, occasionally washes them until they are clean, and at the same time picks out with his hand the remainder of the pith, until nothing except the bark is left. This is then dried, and being taken up by handfuls, is beaten with a stick to separate and clean the fibres. The hemp is then completely ready, and is spun into thread on a spindle, both by the men and women. The men alone weave it, and perform this labour in the open air with a very rude loom.

The following is the value of the manufacture of fibres for six years :—

1870—71	Ra.	6,220	1873—74	Ra.	17,580
1871—72	"	22,807	1874—75	"	39,609
1872—73	"	22,400	1875—76	"	44,627

Oil pressing.—This is a very generally followed calling, all over the country, by the class called Gánigas, described in a previous chapter. The oil mills are in the form of an immense mortar and pestle of stone : in the kind driven by two bullocks the mortar is a block of granite, 6 feet 9 inches above ground, with a pedestal let in to an equal distance under ground. A wooden beam, 17 or 18 feet long, pressing at one end closely against the foot of the mill with a loud creaking noise, which is the well known indication of the neighbourhood of oil mills, has an arm projecting upwards at about a third of its length, which is attached to the head of the pestle. The mill is driven by oxen yoked at the farther end of the beam, who pull it round and round.

The different kinds of oil made are:—

- Woll e||u, til or gingelly oil, from two kinds of *sesamum*
- Huch e||u, or ram til, from *guizotea oleifera*.
- Hara||u, castor oil, from the large and small varieties of *ricinus*.
- Kobri, from the dried kernel (kobri) of the cocoa nut.
- Hippe, from the fruit of the *bassia longifolia*.
- Honge, from the seed of the *pongamia glabra*.

The *woll e||u* oil is expressed from *surugana* and *kari e||us*, the same with the *wolle* and *phulagana ellus* of other parts. The first gives the least oil ; but for the table it is esteemed the best of any in the country ; the price, however, of the two kinds is the same. The mill receives at one time about seventy seers measure (2·42 Winchester bushels) of *sesamum* seed ; and, in the course of grinding, ten *kachcha* seers measure of water (2 78 ale quarts) are gradually added. The grind-

ing continues for six hours, when the farinaceous parts of the seed, and the water, form a cake ; and this having been removed, the oil is found clean and pure in the bottom of the mortar, from whence it is taken by a cup. Seventy *pakka* seers of *surugma*, or 65 seers of *kari ellu* seed give 2 *kachcha* maunds (rather more than $5\frac{1}{2}$ ale gallons) of oil. The mill requires the labour of two men and four oxen, and grinds twice a day. The oxen are fed entirely on straw, and are allowed none of the cake ; which is sometimes dressed with greens and fruits into curry, and at others given to milch cattle.

The *huch ellu* is managed exactly in the same manner. The seventy seers measure require a little more water than the other *ellu*, and gives 65 seers of oil (or a little more than $4\frac{1}{2}$ gallons). This also is used for the table. The cake is never used for curry, but is commonly given to milch cattle.

The *haralu*, or castor oil, is made indifferently from either the large or small varieties of the *ricinus*. It is the common lamp oil of the country, and is also used in medicine. What is made by boiling, as described below, is only for family use ; all that is made for sale is expressed in the mill. To form the cake, seventy seers of the seed require only five seers, *kachcha* measure ($1\cdot39$ ale quarts) of water, and give 60 seers ($4\cdot17$ ale gallons) of oil ; which after being taken out of the mill, must be boiled for half an hour, and then strained through a cloth. The cake is used as fuel.

The following is the process for making castor oil for domestic use.

The seed is parched in pots containing about a seer, which is somewhat more than a quart. It is then beaten in a mortar, by which process balls of it are formed. Of these from four to sixteen seers are put into an earthen pot, with an equal quantity of boiling water, and boiled for five hours ; during which care must be taken, by frequent stirring, to prevent the decoction from burning. The oil now floats on the surface, and is decanted off in another pot, in which it is boiled by itself for a quarter of an hour. It is then fit for use, and by the last boiling is prevented from becoming rancid. After the oil has been poured from the seed, the pot is filled up with water, which is again boiled, and next day the decoction is given to buffaloes, by which their milk is said to be remarkably increased. The boiled seed is mixed with cow-dung and formed into cakes for fuel. The dry stems of the plant are also used for the fire. The oil is commonly used for the lamp. It is also taken internally as a purgative ; and the Sudras, and lower castes, frequently anoint their heads with it, when they labour under any complaint which they attribute to heat in the system.

Kobri oil is made from the dried kernel of the cocoa nut, which is called *kobri*. This oil is chiefly used for anointing the hair and skin. Cakes are also fried in it, and it is sometimes used for the lamp. The mill receives 6 maunds weight of the *kobri* (almost 93 lbs), and 11 *kachcha* seers measure of water (a little more than 3 ale quarts). This produces three maunds (about 7·8 ale gallons) of oil. The natives eat the cake dressed in various ways.

The *hippe* oil, made from the fruit of the *bassia longifolia*, is used for the lamps burned before the gods, being esteemed of a better quality than that of the *ricinus*. The mill takes 70 seers measure, and the seed requires to be moistened with 12 *kachcha* seers (3½ ale quarts) of tamarind water, in which 2 seers of tamarinds have been infused. The produce is 70 seers (4·365 ale gallons) of oil. The cake is used as soap to wash oil out of the hair of those who anoint themselves.

The *honge* oil, produced from the seed of the *pongamia glabra*, is used for the lamp; but it consumes very quickly. It is also used externally in many diseases. Take 70 seers, *pakka* measure, of the seed freed from the pods, add 4 *kachcha* seers measure of water (1·11 ale quart), and beat them in a mortar into a paste. Then tread the paste with the feet; and, having kept it for two or three days, dry it in the sun. It is then put into the mill, with one *kachcha* seer (19·6 cubical inches) of water. It produces 40 seers (2¾ ale gallons) of oil. For fuel, the cake is mixed with cow-dung.

The value of the oil manufactures of the country for six years past is thus stated:—

1870—1	...	Rs. 1,282,116	1873—4	...	Rs. 649,148
1871—2	...	„ 387,829	1874—5	...	„ 808,381
1872—3	...	„ 390,450	1875—6	...	„ 778,164

The following table shews at one view the number of looms and oil-mills in the country, together with the amount of revenue realized upon them for the past ten years. The decrease in both the number and revenue from 1868—69, especially of the cloth and carpet looms, is due to those of the town of Bangalore being made over to the municipality and not included in these returns. The rates of duty are: from 1 to 6 Rs. for cloth looms; 8 As. to 5 Rs. for kambli looms; 2 to 3 Rs. for carpet looms; 8 As. to 3 Rs. for girdle looms; and 1 to 4 Rs. for goni looms: and for oil mills from Rs. 4:—

Year.	Cloth looms.		Kamli looms.		Carpet looms.		Girdle looms.		Goni looms.		Total looms.		Oil mills.	
	No.	Rev.	No.	Rev.	No.	Rev.	No.	Rev.	No.	Rev.	No.	Rev.	No.	Rev.
		Rs.		Rs.		Rs.		Rs.		Rs.		Rs.		Rs.
1866-67	32,750	62,479	9,844	18,798	60	153	338	410	301	416	43,263	82,256	3,382	15,275
1867-68	32,332	61,850	9,784	18,435	62	158	324	417	283	345	42,825	81,255	3,414	15,569
1868-69	28,543	55,040	9,761	18,272	23	73	363	401	291	396	38,921	74,182	3,410	14,658
1869-70	28,464	55,018	9,771	18,080	22	65	282	390	347	450	38,886	74,003	3,478	14,872
1870-71	28,031	54,638	9,790	18,310	5	13	302	417	327	440	38,455	73,818	3,235	13,292
1871-72	28,457	55,148	10,125	18,695	5	13	328	443	332	443	39,477	74,742	3,284	13,445
1872-73	29,228	55,783	10,309	19,069	5	13	320	435	314	436	40,176	75,756	3,315	13,648
1873-74	29,414	55,996	10,353	19,668	6	14	310	430	246	409	40,379	76,517	3,246	13,940
1874-75	29,173	56,399	10,209	19,315	8	20	297	420	352	484	40,030	76,538	3,355	13,904
1875-76	28,971	55,690	10,215	19,417	6	15	341	432	302	414	39,835	76,028	3,363	13,812

Glass-making.—This art is principally, if not entirely, applied to the manufacture of bangles or glass rings, worn on the wrists like bracelets by all classes of women. The chief seat of the trade, which is not so extensive as at one time, is at Mattod, but some glass is also made at Channapatna, part of which is formed into small bottles.

At Mattod the furnaces are constructed in a high terrace, which is built against the inside of the fort-wall, and are in the form of a dome, or like an oven, eight feet in diameter, and about ten feet in height. The oven is not arched, but contracted above into a circular opening, about 18 inches in diameter, by making the upper rows of stones project beyond those below them. At the bottom of the furnace, in the side opposite to the town wall, is a small opening, through which the fuel is supplied. The crucibles are oblong, and would contain about $5\frac{1}{2}$ Winchester gallons. Having been filled with the materials, they are lowered down into the furnace by the aperture in the top, by which also the workmen descend. They first place a row of the crucibles all round the furnace, with their bottoms to the wall and their mouths sloping inwards. In this position they are secured by a bed of clay, which covers the crucibles entirely, leaving their open mouths only exposed. Above this row another is placed in a similar manner, and then a third and a fourth. The furnaces vary in size, from such as can contain fifty crucibles thus disposed to such as can contain twice that number. The fuel consists of small sticks, which having been gathered a year are quite dry. A quantity having been put in the bottom of the furnace, the workmen ascend, and some burning coals are thrown upon the fuel. By the opening below, fresh fuel is added night and day, until the time allowed for

vitrifying the materials has expired. The fire is then allowed to burn out, and the furnace to cool. Afterwards the workmen descend, and take out the crucibles, which must be broken to get at their contents.

The materials used in this manufacture are,—soda, quartz or compact ironstone, compact specular iron ore, and copper.

The soda is gained in the following manner: Some pits about a foot and a half deep are filled with salt earth, and water is poured upon it. The same quantity of water is poured successively upon different portions of salt earth till it is conceived to be sufficiently impregnated with saline matter, which is judged of by its brown colour. This water is then worked into a pultaceous mass with cowdung, and spread about an inch thick upon a straw mat, and dried in the sun. Another layer prepared in the same way is applied the next day, and for twelve successive days it is kept moist by the addition of fresh portions of lixivium of soda. The large cake is then divided into smaller pieces, which, when quite dry, are piled up into a heap and burnt. The fine ashes which are found along with the more solid pieces are kept separate. The latter are reduced to powder, stored up, and called *saulu sáram* (essence of soda); because they contain the largest quantity of soda.

The quartz (*biji kallu*) used is a little iron-shot. *Góru kallu* is an iron ore that comes nearest to compact brown ironstone (hydrate of iron). *Kemmiḷu kallu*, iron glance, specular iron ore or red oxide of iron, is found in sufficient quantities after heavy rains in a nullah in Budihal taluk. The nullah comes from the north side of a hill which probably contains the ore in rocks. This ore is reckoned best when firm and sound. If red ochre appear in the fracture, the specimen is esteemed inferior to the best kind, in the proportion of two to three. And accordingly a greater quantity of it is considered as necessary in the manufacture of glass.

From these few materials the following kinds of glass are made:—

Bija or *mother glass*.—It is a soft, imperfect, porous glass; and is used only as a substratum or basis to the other kinds of glass. It is made of the following ingredients:—The ashes which remain when the soda is made, and which, as was mentioned before, are kept apart. If these ashes do not contain many grains of salt, five parts of them are taken; but if they are mixed with much salt, three parts are deemed sufficient. To these are added of pounded quartz, or *biji kallu*, one part. These two ingredients are separately pounded and then, mix-

ed together, put into clay pots and kept in the heated furnace for eight days. To see whether glass is formed, an iron hook fastened to a long bamboo is dipped into a pot containing the glass materials. If the mass adhering to it be of the consistence of wax, the operation is finished. If not, another day's heat is given.

Red glass.—This is of a hyacinthine colour, penetrated with large round white spots. It is composed of bija 7 parts, soda or saulu sáram 21, and kemmidu kallu 10. All the ingredients are first separately reduced to an impalpable powder, and then mixed. It requires first three days of slow heat, and then seven days of the strongest fire that can be given. If more than the stated quantity of kemmidu be taken, the glass acquires a black colour; if less, it assumes a lighter shade of red.

Green glass.—This glass has a dark emerald green colour with opaque spots, and is composed of the following ingredients; soda or saulu sáram 21 parts, bija 7, kemmidu kallu $\frac{5}{8}$, and copper filings $\frac{7}{8}$. These materials having been mixed and put into the crucibles, these are properly disposed in the furnace, and a fire is kept up for nine days and nine nights. For the first five days the fuel is added slowly, so that the flame just rises to the aperture; and afterwards it is not necessary to occasion quite so great a heat as for the frit (bija) or black glass. The copper is calcined by burning it, on the fire place in the bottom of the furnace, during the whole nine days that are required to make this glass. The saline crust formed on the surface of this glass is considered by the natives as unfit for eating.

Black glass.—This glass is made of 3 parts of saulu sáram and 1 of bija. Four days moderate heat is enough for obtaining it. The charcoal of the saulu sáram probably gives it the black colour, as it will lose it if the fire be too long continued or too strong. This glass is the least esteemed of all. It is quite opaque and has a close resemblance to enamel. The common salt contained in the soda separates itself from the other ingredients, and is found covering the glass or bija in a firm crust of one inch or more in thickness. It is very fine and white, and used like sea salt.

Blue glass.—This is composed of 21 parts of soda, 7 of bija, $\frac{7}{8}$ of copper filings, and an equal quantity of powdered kari kallu. For fifteen days and nights, these materials must be burned with a moderate fire.

Yellow glass is made of 21 parts of soda, and 7 parts of native soda (salt earth) from which all the small stones have been picked, but which of course contains a good deal of sand. For fifteen days these are burned with a slow fire. When this glass is wrought up into rings, it receives a bright yellow colour by enamelling it with the melted *calces* of the following metals: 5 parts of lead, and one of tin are calcined together. Then one part of *sattu* or zinc is calcined in a separate crucible. The two *calces* are then mixed, and farther calcined, until they begin to adhere together. They are then powdered in a mortar. When the ring-maker is at work, he melts some of this powder, and, while the ring is hot, with an iron rod he applies a little of the powder to the surface of the glass.

The yield for each crucible in all cases is the same, except the red and green kinds, which give respectively $1\frac{1}{2}$ maund (30 $\frac{1}{2}$ lbs) and $1\frac{3}{4}$ maund (31 $\frac{3}{4}$ lbs); while the others give only 1 maund or 24 $\frac{1}{4}$ lbs.

Carpentry and turning.—The ordinary carpenters are engaged chiefly in making of carts and agricultural implements, with fittings and furniture for the houses of the villagers. In Bangalore and some other large places cabinet work is turned out of great excellence, copied from English designs. Coach and carriage building is also successfully carried on.

The toys for which Channapatna is famous are remarkably well suited for their purpose, and much sought after by Europeans as well as natives.

The miniature imitations of native vessels and implements are turned from *hâlê* wood, and coated with lac of bright colours, simply applied by the heat of the friction in turning. These toys are of brilliant colours, smooth, and hard, and the colour never comes off. Larger toys, representing various animals, are made from a soft wood like touchwood, *bhûrige mara*. They are elaborately painted by hand; the birds especially, and some fruits, being very fairly modelled and painted to imitate nature.

Sugar and Jaggory.—The expression of juice from the sugar cane is an important industrial operation, the details of which may be described as follows.

The boiling-house is a thatched hut, about 40 feet long and 20 broad, with a door in front, but without windows. The walls are mud,

and stand all the year ; but a new roof of very slight materials is put on annually, when the crop is ripe. At one end is a square pit for holding the cuttings of the sugar cane, and at the other is the boiler. The furnace is partly raised and partly sunk ; it is in the form of a truncated cone, and the fuel is supplied from without by an opening in the wall. A small hole for letting out the smoke is placed before the boiler, and has no chimney. The iron boiler is flat, and completely shuts the mouth of the furnace. Before the boiler is a cavity for containing the large cooling jar. The sugar mill consists of a mortar, beam, lever, pestle and regulator.

The mortar is a tree, about 10 feet in length, and 14 inches in diameter. It is sunk perpendicularly into the earth, leaving one end 2 feet above the surface. The hollow is conical, truncated downwards, and then becomes cylindrical with a hemispherical projection in its bottom, in order to allow the juice to run freely to the small opening that conveys it to a spout, from which it falls into an earthen pot. Round the upper mouth of the cone is a circular cavity, which collects any of the juice that may run over from the upper ends of the pieces of cane ; and from thence a canal conveys this juice down the outside of the mortar to the spout.

The beam is about 16 feet in length and 6 inches in thickness, and is cut out from a large tree that is divided by a fork into two arms. In the fork an excavation is made for the mortar, round which the beam turns horizontally. The surface of this excavation is secured by a semicircle of strong wood. The end towards the forks is quite open for changing the beam without trouble. On the undivided end of the beam sits the bullock driver, whose cattle are yoked by a rope, which comes from the end of the beam ; and they are prevented from dragging out of the circle by another rope which passes from the yoke to the forked end of the beam. On the arms a basket is placed to hold the cuttings of cane ; and between this and the mortar sits the man who feeds the mill. Just as the pestle comes round, he places the pieces of cane sloping down the cavity of the mortar ; and, after the pestle has passed, he removes those which have been squeezed.

The lever is a piece of timber nearly of the same length with the beam. Its thicker and lower end is connected with the undivided end of the beam by the regulator. Some way above its junction with the regulator, a piece of *sujalu*, which is a very hard wood, is dovetailed into the lower side of the lever ; and in this piece is made a smooth conical hollow, which rests on the head of the pestle. The upper end of the lever is fastened to the two arms of the beam by two ropes.

The pestle is a strong cylindrical piece of timber, about four feet in length. At each end it is cut to a point, so as at the upper end to form a cone, and at the lower a pyramid of from twelve to fifteen sides, surmounted by a short cylinder. The cavity in the lever being towards one end, makes the position of the pestle always oblique; so that as it passes round it rubs strongly against the sides of the mortar. Its cylindrical point rubs on the top of the hemispherical projection that is in the bottom of the cylindrical cavity of the mortar.

The regulator is a strong square piece of timber, which passes through the undivided end of the beam, and is secured below by part of its circumference being left for cheeks. It is perforated by eight holes, in the lowest of which is placed a pin to prevent the regulator from falling when the strain is removed. A pin in one of the upper holes of the regulator and another in one of the holes in the thick end of the lever, serve to secure in their place the ropes that bind closely together these two parts of the machine. According as these pins are placed higher or lower, the relative direction of all the moveable parts of the machine is altered, and the balance of the beam is so regulated that it goes round without any friction, but yet with its fork closely applied to the mortar. The only frictions in this machine, it must be observed, are at the two extremities of the pestle; and that which is at the lower end is entirely employed in bruising the cane, which is the object in view: still, however, it is a machine badly contrived for the purpose to which it is applied.

When the works and machinery have been prepared for making jaggory, all the proprietors of sugar cane in the village assemble, and work together a day at each man's field, in rotation, until the whole is finished. A sufficient number of people bring the canes to a man who cuts them into pieces about six inches long, and puts them in the square cavity in the boiling house. From thence one man supplies the basket of the person who feeds the mill, and who is the third man employed at the works. The fourth man drives the bullocks; a fifth carries the juice to the boiler; a sixth attends the fire; and a seventh manages the boiler. The mill goes night and day; and gives 56 pots of juice, containing in all about 218 ale gallons. The bullocks are changed after having expressed three pots, and do no more work that day, having been obliged to go very fast. Two of them are in the yoke at a time.

The cane raised on black mould gives about a fifth part more juice than that produced on sandy soil: but then nine pots of the latter give a hundred balls of jaggory, while it requires twelve, or even fourteen,

pots of the former to produce the same quantity. The workmen always put into the boiler as much juice as will yield a hundred balls of jaggory. It is strained into the boiler through a cotton cloth, and there is added to it a proper quantity of lime-water. In a boiler full of rich juice, from cane raised on sandy soil, there is put half a seer of lime water, or about 34 cubical inches; and poorer juice from the same kind of soil requires double that quantity. The boiler full of juice from black mould cane requires five or six seers, which is added by degrees. The boiler performs his operations three times in the twenty-four hours.

When the juice has been evaporated to a proper consistence, it is put into a large pot and allowed to cool for two or three hours. It is then poured into the mould, which consists of a long thick plank, in which a hundred holes are formed, each in the shape of a quadrilateral¹ inverted pyramid. The jaggory, or inspissated juice, is allowed to dry in the mould for four hours; when the plank being turned over, the balls, or rather pyramids, of jaggory fall down. They are dried by placing them on leaves for a day, and are then fit for sale. These balls weigh $1\frac{3}{4}$ seer, or 1·06 lb. The jaggory thus contains both the sugar and molasses, and is similar to what in Jamaica comes out of the cooler before it is taken to the curing house. It is, however, somewhat more inspissated; for which an allowance must be made if we wish to compare the strength of the sugar cane juice in the two countries. By the foregoing account it requires about 37 gallons of the best juice to make 1 cwt. of jaggory.

The sugar mills used in the north-east are two cylinders, wrought by a perpetual screw, and two bullocks; but seven times in the 24 hours the bullocks are changed. The mill goes night and day; and, by the labour of 14 bullocks, expresses 7,000 canes, which produce 14 maunds of jaggory, or 7 maunds of raw sugar, equal to $1\frac{1}{2}$ cwt.

Ashagram Sugar Works.—A factory known by this name is situated at Palhalli for refining into sugar the jaggory produced by the ryots. The following are the details of manufacture:—

Cane jaggory is usually in the form of small compressed square cakes, shelving on one side into an inverted cone. This jaggory is sold by the growers of the cane at so much per cake. But at the sugar works it is purchased by weight, in order to render which uniform, a table has been prepared fixing the weight of 1,000 cakes at 7 cwt. 6 lbs. and the price is computed at so much per 1,000 cakes.

The jaggory is placed in two large copper caldrons, called 'blow-ups,' mixed with water, a small quantity of lime, and animal blood, and boiled by steam until the whole is dissolved and attains a certain consistency. The lime is added to neutralize any acidity which may remain in the jaggory, and the blood combines with the gluten matter contained in the solution and carries it to the bottom. The solution or liquor (as it is now termed) is let into troughs, and undergoes a course of filtration through drill bags fixed in machines fitted up for the purpose. This filtered liquor is conducted to a cistern, whence it is pumped up to the top of a large iron cylinder filled with about 20 tons weight of animal charcoal made into grain, through which the liquor has to pass that it may become decolorized. It is then let into a tank, whence it is drawn up by the action of an air-pump into the vacuum pan, where it is again boiled by steam in vacuo, and crystallization ensues. After this it is let down into large wooden boxes to cool, and is skimmed and allowed to drain to a small extent. The sugar is now put into machinery, where by centrifugal action and the application of certain liquors composed of dissolved sugar and spirits, the pure white crystals are entirely separated from the remaining syrup and treacle, and the process is then complete.

The sugar thus obtained is put into a room with a boarded floor, and sorted into three classes according to quality; that consisting of large clear crystals is called P. or the 1st sort; the smaller crystals are termed N. or the 2nd sort; and the rest K. X. or the 3rd sort. These are now put into bags and are ready for sale. The 1st and 2nd sorts are made entirely of sugar cane jaggory, and are composed of the early or first boilings, while the 3rd sort is that which is produced from the last boilings, and contains an admixture of selected and carefully prepared date jaggory, of which only a small portion, or about 20 per cent in quantity, is added at the 'blow-ups.' The syrup and treacle that are skimmed and drained from the wooden and centrifugal boxes are sometimes again boiled in the vacuum pan and converted into molasses sugar, which, on being drained by a further tedious process, is converted into the 3rd sort of sugar. But more frequently the molasses and skimmings are fermented and distilled for rum.

Date jaggory as crudely manufactured by the native method is not capable of being converted into good crystallized sugar. An establishment for the purpose of manufacturing date jaggory more carefully

was instituted some years ago by Messrs. Groves & Co. in Banavar taluk. But practical results, as compared with the sugar cane jaggory, led to the abandonment of the project. The out-turn of sugar from jaggory, manufactured as above, is estimated at 50 per cent. Of the remainder, about 30 per cent is utilizable for distilling rum, and the rest goes to waste. With the machinery, comprising water and steam power and other facilities, in the Ashtagram Sugar Works, it is reckoned that not less than 2,000 tons of sugar may be manufactured annually. This would utilize 4,000 tons of jaggory, which, at an average price of Rs. 30 per 1,000 cakes, would find the growers of sugar-cane a market for Rs. 170,000 worth of produce at their fields, or for one half of what may be grown in the late two Ashtagram taluks with ease.

The Ashtagram Sugar Works were established in the year 1847. The then Commissioner of Mysore, the late Sir Mark Cubbon, afforded the spirited projectors, Messrs. Groves & Co., every help in his power, and it is beyond question that the Palhalli factory has been a source of great public benefit in developing the resources of agriculture in that part of the country, as evidenced by the affluent position of all those ryots who own wet lands, and by the increased value of the wet lands themselves as compared with similar lands in neighbouring taluks. The number of men who find employment at the sugar works, when in full operation, is said to be about 10 Europeans and 300 natives. The works are now carried on by a Joint Stock Company. The prize and medal for the best crystallized sugar at the Great Exhibitions in London in 1851 and 1861 were awarded to the Ashtagram Sugar Works; and at the Universal Exhibition in Paris in 1867, where the exhibitors in sugar were numerous and competition great, 'honourable mention' was awarded.

The value of the sugar manufactured in the country is stated as given below :—

1870—1	...Rs. 128,100	1873—4	... Rs. 133,625
1871—2	... 117,136	1874—5	... 545,700
1872—3	... 103,850	1875—6	... 491,300

Leather dressing.—Leather is tanned at Bangalore in the following way. To dress the raw hides of sheep or goats, the Mádigas in the first place wash them clean, and then rub each with the fourth part of a kind of soft paste, made of 6 dudus weight of the milky juice of the *yakkada* (*asclepias gigantea*), about 6 dudus weight (2·426 ounces) of salt (muriate of soda), and 12 dudus weight of ragi *ambuli* or pudding, with a sufficient quantity of water. This paste is rubbed on the hairy side,

and the skins are then exposed for three days to the sun ; after which they are washed with water, beating them well on a stone. This takes off the hair. Then powder 2 seers (1·213 lb) of myrobalans, and put them and one skin into a pot with 3 or 4 seers measure of hot water, where it is to remain for three days. The skin is then to be washed and dried.

This tanned skin is dyed black as follows : take of old iron, and of the dross of iron forges, each a handful ; of plantain and lime skins, each five or six ; put them into a pot with some ragi *kanji*, or decoction of ragi, and let them stand for eight days. Then rub the liquor on the skins, which immediately become black.

These skins may be dyed red by the following process : take of ungurbled lac 2 dudus weight, (about 13 drams), of *suja kara*, or fine soda, 1 dudu weight, and of *loḍu* bark 2 dudus weight. Having taken the sticks from the lac, and powdered the soda and bark, boil them all together in a seer of water (68½ cubical inches) for 1½ hour. Rub the skin, after it has been freed from the hair as before mentioned, with this decoction ; and then put it into the pot with the myrobalans and water for three days. This is a good colour, and for many purposes the skins are well dressed.

The hides of oxen and buffaloes are dressed as follows : For each skin take 2 seers (1·213 lb) of quicklime, and 5 or 6 seers measure (about 1½ ale gallon) of water ; and in this mixture keep the skins for eight days, and rub off the hair. Then for each skin take 10 seers by weight (about 6 lb), of the unpeeled sticks of the tangadi (*cassia auriculata*), and 10 seers measure of water (about 2½ ale gallons), and in this infusion keep the skins for four days. For an equal length of time add the same quantity of tangadi and water. Then wash, and dry the skins in the sun, stretching them out with pegs. This leather is very bad.

A very pretty kind of red morocco is manufactured at Harihar by a set of people called Muchikar. It is in the first place tanned. The goat skins (for these only are employed) are dried in the sun for one day ; next day they are washed in the river, rolled up and put into a pot, with a mixture (for each skin) of one handful of common salt, as much water, and half of that quantity of the milk of wild cotton (*asclepias gigantea*). After the skins have been soaked in this mixture for four days, the pot is filled up with water, and the leather suffered to

remain four days longer in it : the hair now comes easily off the skins when scraped by a piece of broken pot. The leather thus cleaned is laid in the shade, and when dry is rolled up and kept in a house for two or three days, in a place secure from smoke and from insects ; it is then soaked for eight hours in pure water, and scraped with a piece of earthen ware till it becomes quite white. Before the leather is dyed it is soaked for one night in a pakka seer of water which has been mixed with a handful of cholam meal (*holcus sorghum*) and warmed on the fire ; in the morning it is taken out and dried with a piece of cloth : when well dried, it is soaked again for half an hour in water with which one seer of tamarinds has been mixed ; it is then spread on a mat and the colour applied.

For the red colour take $\frac{1}{4}$ kachcha seer of lac (18 drams), alli toppalu (leaves of the *mimocylon capitellatum*) $\frac{1}{2}$ of a dub weight, and the same quantity of the salt extracted from washerman's earth (carbonate of soda) : pound these ingredients together, boil $\frac{1}{4}$ of a seer of water in a place where there is no wind ; put the pounded mass into it and keep it for a quarter of an hour over a slow fire. To ascertain whether it has acquired the requisite consistence, dip a cholam straw into it ; if the liquid does not run down the straw when turned up it is sufficiently done, but if it runs, the boiling must be continued for some time longer.

The leather (previously extended on a mat) is, at three different times, rubbed over with this liquid ; it is then thrice sprinkled over with tamarind water, and lastly it is steeped for five or six days in a liquid composed of three seers of water and one seer of pounded tangadi bark. Every morning it is taken out, washed a little, and again replaced, till at last it is well washed in clear water and dried : thus prepared, it has a fine crimson colour, and is very soft.

Earth salt.—The manufacture of earth salt is conducted as follows. In the dry season, the surface of the earth is scraped off and collected in heaps. In front of these heaps the native salt-makers construct a semi-circle of small round cisterns, each about three feet in diameter and a foot deep. The sides and floors of these cisterns are made of dry mud ; and each, at its bottom, on the side toward the heaps of saline earth, has a small aperture, with a wooden spout, to convey the brine into an earthen pot that is placed in a cavity under it. The bottoms of

the cisterns are covered with straw, and then the saline earth is put in, till it rises nearly to the level of the tops of the walls. Water is now poured on the surface of the saline earth, and, in filtering through into the pots, carries with it all the salt. The inert earth is then thrown out behind the cisterns, and new earth is put in, for impregnating more water. In the meantime the brine is emptied into a cavity cut in a rock, and the evaporation is performed entirely by the sun. The grain of the salt is large, and consists of well-formed cubes ; but it is mixed with much earthy impurity.

The different classes of manufacturers and artisans are given in detail under each District in Vol. II. The numbers belonging to each great section of the population who are engaged in industrial callings may be thus shewn :—

Persons employed	In manufac- ture.	In construct- ive art.	As artisans.	As dealers and tradesmen.	As carriers.	As bankers, money lenders and merchants.
Hindus ...	83,715	26,352	75,778	61,729	6,470	12,381
Muhammadians ...	1,073	339	3,495	6,471	870	2,352
Christians ...	31	213	235	227	71	101
Total.....	84,819	26,904	79,508	68,427	7,411	14,834

Persons employed	In agricul- ture.	With animals.	As labourers.	As domestic servants.	Total.
Hindus ...	1,010,045	36,746	256,704	31,246	1,601,166
Muhammadians ...	23,232	995	15,208	2,223	56,258
Christians ...	1,401	35	1,264	1,704	5,282
Total.....	1,034,678	37,776	273,176	35,173	1,662,706

Trade and Commerce.

The land-locked position of Mysore, the mountain barriers which separate it from the surrounding countries on three sides, and the want of navigable rivers, are circumstances unfavourable for external trade. In the time of Tippu all importation was forbidden, with the view of stimulating home production. But owing to the arbitrary measures adopted to bring about this result, the government itself entering the market as a wholesale dealer, the effect was rather to check the natural growth of trade and to paralyse industry. Although under the government of

the late Raja the same restriction did not exist, yet commerce was shackled by vexatious transit duties, to the abolition of which the early efforts of the British Commissioners were directed.

Since 1831, the construction of an excellent system of trunk roads throughout the country, leading through the ghats or mountain passes to the surrounding territories and to the chief ports on the western coast, together with the opening of the branch railway from Bangalore to Madras, have greatly stimulated traffic. The religious festivals, and the weekly fairs or *santes*, are the principal opportunities of trade in the rural districts. The large merchants are chiefly residents in the towns. They employ agents throughout the districts to buy up the grain, in many cases giving half the price in advance before the harvest is reaped. By this means a few men of large capital are able to some extent to regulate the market.

Sandal wood, grain, cotton, areca nut, coffee and a few other commodities are the principal articles of commerce. The best method of exhibiting the interchange of trade will be to give the exports and imports for a series of years. Though the figures cannot be accepted as altogether correct, they no doubt shew roughly the general course of trade, the articles carried to and from the country, and the annual value of the transactions. The means of transport are country carts and pack bullocks or asses.

Table of imports into Mysore

Articles.	1865—6.		1866—7		1868—9.		1869—70.		1870—1.	
	Value Rs.	Quantity Tons.	Value Rs.	Quantity Tons.	Value Rs.	Quantity Tons.	Value Rs.	Quantity Tons.	Value Rs.	
Areca nut ...	30,000	729	746,102	...	...	...	...	1,148	802,892	
Bell metal ...	45,000	33	54,495	16	20,222	32	17,766	...	...	
Betel leaves No. ...	2,474,128	108,708	3,462,147	272,590	8,486,961	195,796	1,982,163	99,295	...	
Brass ...	...	523	638,232	441	583,461	396	446,448	...	...	
Camphor ...	...	40	133,175	106	100,996	92	142,294	77	63,765	
Cardamoms ...	27,000	7	28,456	...	...	...	...	5	24,920	
Chillies ...	...	640	135,735	1,079	147,500	629	113,083	1,106	192,775	
Cholam ...	...	3,448	260,547	...	...	...	...	2,381	85,824	
Cinnamon ...	...	3	2,111	4	7,810	4	6,982	...	...	
Cloves ...	...	61	24,222	27	11,184	23	7,981	27	12,137	
Coarse cloths No. ...	750,000	155,091	426,670	127,485	417,263	130,435	303,576	73,550	141,750	
Cocoa nut, fresh "	50,000	2,536,122	357,278	1,055,913	40,154	1,153,947	42,171	1,912,722	89,213	
Do dry ...	...	71	185,042	1,731	618,345	232	105,629	203	65,773	
Cocoa nut oil ...	...	140	103,502	95	34,412	78	41,649	34	16,649	
Coffee ...	...	1,250	6,260	...	...	...	...	725	358,300	
Copper ...	675,000	319	523,190	252	364,688	226	335,300	...	...	
Cotton ...	1,000,000	1,005	743,159	821	334,266	1,977	1,147,504	1,966	909,903	
Cotton thread ...	...	414	542,276	477	291,739	351	406,945	243	338,095	
Gingelly oil ...	...	123	69,922	...	...	...	...	196	79,834	
Gold ...	2,750,000	5	2,452,500	...	497,400	...	2,832,843	...	1,672,600	
Gram, Bengal ...	...	1,916	222,778	1,856	146,198	1,237	77,402	1,154	130,742	
Do black ...	...	771	116,046	1,290	126,569	603	63,644	1,422	124,531	
Do green ...	...	1,223	151,367	4,325	232,629	541	32,522	4,923	400,875	
Do horse ...	...	7,533	722,724	...	...	...	...	5,319	207,283	
Hides ...	No. 20,000	16,318	11,630	33,650	25,825	32,000	20,000	23,500	20,200	
Indigo ...	...	37	111,011	61	78,695	27	54,685	...	...	
Iron ...	100,000	1,022	232,985	711	163,662	998	205,911	737	169,727	
Jaggory ...	...	2,031	433,850	...	...	...	...	1,168	144,194	
Lead ...	...	22	7,157	...	...	...	...	...	...	
Millets ...	...	222	12,028	...	...	...	...	...	...	
Opium ...	...	1	5,511	...	...	...	...	...	4,129	
Paddy ...	...	18,582	846,323	...	...	...	...	3,458	215,236	
Paper ...	200,000	...	...	...	...	...	...	...	...	
Pepper ...	25,000	126	85,755	232	60,233	110	44,997	553	243,287	
Piece goods No. ...	5,000,000	859,902	6,035,408	2,449,514	12,665,089	1,546,498	1,157,5987	529,260	2,620,325	
Poppy seed ...	...	18	17,197	...	...	...	...	14	11,431	
Potatoes ...	300,000	441	52,083	7,033	94,590	1,127	105,580	...	...	
Ragi ...	...	39,470	3,432,383	...	...	...	...	16,116	360,352	
Rice ...	1,400,000	12,617	2,189,650	15,395	1,370,570	18,494	1,151,415	17,487	1,330,915	
Salt, earth ...	25,000	1,099	68,529	505	31,576	1,140	30,509	...	...	
Do sea ...	600,000	7,558	619,461	8,120	623,251	6,745	606,792	6,178	665,845	
Sandal oil ...	...	...	5,185	...	3,902	...	3,430	...	11,580	
Silk ...	85,000	14	1,643,360	32	751,338	33	417,100	15	278,670	
Silk (raw) ...	...	...	...	...	...	...	...	...	...	
Silk cloth No. ...	...	4,802	89,150	11,886	82,632	14,679	167,882	2,750	15,908	
Silver ...	250,000	2	178,020	3	228,780	2	218,872	6	265,500	
Steel ...	...	753	34,487	686	21,680	568	23,855	...	...	
Sugar ...	...	415	150,750	357	114,542	719	137,373	144	58,784	
Tamarind ...	...	686	58,875	...	...	...	...	287	20,992	
Tobacco ...	300,000	785	261,273	659	355,411	295	223,523	138	50,420	
Togari ...	...	2,270	214,300	2,512	94,319	2,121	167,383	3,026	229,457	
Turneric ...	...	106	42,675	288	50,530	87	31,497	...	...	
Wheat ...	150,000	1,736	222,450	2,390	198,214	2,345	71,295	2,321	216,073	

for ten years:—

1871—2.		1872—3.		1873—4.		1874—5.		1875—6.	
Quantity Tons.	Value Rs.	Quantity Tons.	Value Rs.	Quantity Tons.	Value Rs.	Quantity Tons.	Value Rs.	Quantity Tons.	Value Rs.
5,444	2,377,697	1,487	1,052,809	2,036	1,602,414	1,276	815,626	1,377	1,028,772
3,025,862	126,288	2,520,235	99,033	7,004,950	233,508	8,030,000	251,200	6,247,500	245,923
...	...	...	...	...	...	...	...	...	...
7	13,010	28	50,145	22	34,931	21	78,620	25	38,709
24	155,768	4	21,765	5	25,495	3	19,915	3	21,250
506	61,804	1,334	188,826	1,404	296,114	1,076	195,030	1,062	61,000
15,223	327,964	75	19,100	1,233	64,990	782	40,920	733	68,170
...	...	...	...	...	...	...	...	...	...
...	...	32	48,399	17	15,354	18	35,460	38	47,696
97,907	274,703	122,000	1,066,000	665,814	2,341,265	230,900	1,623,830	638,555	2,162,421
3,088,200	101,975	2,357,380	75,215	2,538,331	79,051	1,092,800	3,183,22	2,111,100	19,721
1,028	387,717	1,597	122,123	234	44,845	57	15,995	161	55,075
3	1,860	122	50,656	121	58,471	118	55,338	110	51,900
617	249,640	440	210,220	377	151,860	438	175,640	431	202,272
...	...	...	...	...	...	...	...	...	...
984	544,275	1,876	958,461	1,898	1,030,752	1,852	1,015,048	2,687	1,452,700
78	52,630	267	24,512	188	207,540	124	162,880	183	192,500
214	72,215	209	73,411	221	82,026	111	41,635	281	97,008
...	...	...	11,723,700	...	1,701,675	...	1,511,930	...	1,542,800
1,761	137,260	584	61,746	826	56,462	834	78,684	936	99,008
592	34,040	642	45,347	661	63,808	131	16,000	832	78,760
240	16,570	547	38,041	756	67,538	600	48,000	801	64,068
2,542	219,349	2,931	112,900	3,808	161,585	3,928	181,720	4,560	303,300
71,882	60,628	37,355	34,792	35,250	50,575	20,000	25,000	19,500	24,750
...	...	...	...	...	...	...	...	...	...
338	71,590	937	210,782	1,079	219,042	929	207,980	1,147	252,061
2,985	309,446	1,055	123,053	1,264	143,134	964	112,500	857	120,000
...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...
3	26,489	...	4,754	...	5,230	2	1,600	...	...
31,413	831,880	3,780	119,400	1,025	42,857	300	8,000	915	41,700
...	...	...	...	...	...	...	...	...	...
59	53,520	393	340,261	282	207,820	264	203,514	264	188,932
90,657	947,441	751,162	5,251,831	806,641	4,496,342	943,773	4,966,095	516,750	4,002,476
...	...	12	8,900	35	5,447	15	2,000	32	2,722
...	...	...	...	...	...	...	...	...	...
30,293	579,812	21,007	601,700	16,017	423,643	7,500	200,000	13,500	620,000
5,032	249,162	55,995	1,139,926	14,304	934,307	11,221	538,000	16,914	1,074,600
8	520	758	40,400	158	4,760	...	...	281	16,250
...	...	33,285	3,074,400	32,052	2,324,103	31,859	2,600,868	...	...
...	...	...	1,840	...	2,195	...	1,659	...	1,367
86	679,460	24	451,000	46	855,033	5	120,790	62	262,357
...	...	...	144	...	1,580	...	...	...	...
1,864	37,280	2,700	44,200	13,120	108,700	20,663	172,740	43,201	228,860
...	...	33	3,046,080	27	2,548,620	28	2,645,498	32	2,914,154
...	...	...	...	...	...	...	...	...	...
138	63,670	243	91,710	247	84,315	124	37,815	141	40,483
705	51,127	482	31,795	475	31,480	478	42,500	857	40,000
921	239,853	367	165,677	535	379,533	438	355,376	455	357,462
959	79,423	2,238	205,874	3,187	368,994	3,199	281,230	443	242,725
...	...	...	...	...	...	...	...	...	...
535	51,820	1,844	223,811	17,946	1,351,275	13,676	863,895	15,700	1,685,895

The great development in recent years of commercial speculations and transactions may be gathered from the following list of the banking and trading Joint Stock Companies (Limited) registered in Mysore :—

No.	Name.	Place.	Registered.	Amount of Capital.	No. of shares into which Capital is divided.
1	Bangalore Bank ...	Bangalore	1868	Rs. 700,000	3,500
2	Mysore Bank Corporation ...	Do	1868	200,000	8,000
3	Hindu Dravya Sekhara Nidhi ...	Do	1869	50,000	2,000
4	Kolar Bank ...	Kolar	1869	50,000	5,000
5	Karnatik Bank ...	Bangalore	1869	150,000	6,000
6	Savings Bank ...	Chitaldroog	1870	50,000	5,000
7	Hindu Bank ...	Bangalore	1870	200,000	8,000
8	Savings Bank ...	Tumkur	1870	50,000	5,000
9	Savings Bank ...	Srinivasapur	1871	20,000	2,000
10	Maharashtra Bank ...	Bangalore	1871	50,000	2,000
11	Mutual Benefit Fund ...	Kolar	1871	50,000	2,500
12	Town Bank ...	Bangalore	1871	50,000	2,500
13	Munsiff's Bank ...	Srinivasapur	1872	20,000	2,000
14	Pete Merchants' Bank ...	Bangalore	1872	30,000	12,000
15	Victoria Bank ...	Kolar	1872	20,000	800
16	Commercial Bank ...	Do	1872	20,000	1,000
17	Dhanabhivridhi Bank ...	Bangalore	1872	25,000	1,000
18	Beli Bank ...	Do	1872	20,000	800
19	Alsur Bank ...	Do	1873	50,000	2,500
20	Commercial Bank ...	Do	1873	50,000	1,000
21	Bowringpet Bank ...	Bowringpet	1873	20,000	2,000
22	Dodpete Sahukars' Bank ...	Kolar	1873	20,000	1,000
23	Kalyanapuri Bank ...	Bangalore	1873	100,000	4,000
24	Ammanavarapete Maharaja's Bank ...	Kolar	1873	20,000	1,000
25	Chamraj Wodeyar Bahadur Bank ...	Do	1873	20,000	2,000
26	Benares Bank ...	Do	1873	20,000	2,000
27	Sir Mark Cubbon's Bank ...	Do	1873	20,000	1,000
28	Malur Bank ...	Malur	1873	20,000	2,000
29	Karnatik Bank ...	Tumkur	1874	30,000	1,500
30	Dhanabhivridhi Bank ...	Bowringpet	1874	20,000	1,000
31	Murahaswami Bank ...	Bangalore	1874	20,000	800
32	Rajadhani Bank ...	Mysore	1874	20,000	1,600
33	Alalal Bank ...	Chikballapur	1874	30,000	1,000
34	Ashtagram Sugar and Rum Works Company ...	Palhalli	1874	200,000	500
35	Ice Manufacturing Company ...	Bangalore	1874	100,000	1,000
36	Sri Chamarajendra Bank ...	Tumkur	1874	20,000	2,000
37	Karnatik Bank ...	Kolar	1874	50,000	1,000
38	Town Bank ...	Mysore	1874	100,000	4,000
39	Sri Ganesa Bank ...	Malur	1874	20,000	2,000
40	Devaraya Bank ...	Kyatsandra	1874	20,000	1,000
41	Karnatik Kalanidhi Bank ...	Siddaghatta	1874	20,000	2,000
42	Alsur Janapakara Bank ...	Bangalore	1874	20,000	1,111
43	Town Bank ...	Kolar	1874	20,000	1,000
44	Bangalore Mercantile Company ...	Bangalore	1874	20,000	800
45	Unitel Native Bank ...	Do	1874	50,000	2,500
46	Rajadhani Bank ...	Malur	1874	20,000	1,000
47	Lakshmi Venkatramanaswami Bank ...	Kolar	1874	20,000	1,000
48	Namadeva Bank ...	Do	1875	20,000	1,000
49	Kamasandra Bank ...	Kamasandra	1875	20,000	1,000
50	Kalyanapuri Bank ...	Kolar	1875	20,000	1,000
51	Betmangala Bank ...	Betmangala	1875	20,000	2,000
52	Subrahmanyeswaraswami Bank ...	Chikballapur	1875	50,000	2,000
53	Lakshmi Vilas Bank ...	Bangalore	1875	50,000	2,000
54	Alsur Hindu Fund ...	Bangalore	1875	20,000	1,800
55	Dravyabhivridhi Bank ...	Chikballapur	1875	20,000	1,000
56	Alsur Hindu Dravya Poshini Sangham ...	Bangalore	1875	40,000	800
57	Srinivasa Bank ...	Kyatsandra	1875	20,000	2,000
58	Cantonment Cavalry Road Savings Bank ...	Bangalore	1875	50,000	2,000

No.	Name.	Place.	Registered.	Amount of Capital.	No. of shares into which Capital is divided.
59	Kolanda Ramaswami Bank	... Chikballapur ...	1875	20,000	2,000
60	Ranganathapuri Bank ...	... Magadi ...	1875	20,000	800
61	Hindu Bank...	... Srivasapur ...	1875	20,000	2,000
62	Vyápārābhivridhi Company	... Bangalore ...	1875	20,000	400
63	Alsar Mercantile Company	... Do ...	1875	20,000	262
64	Provincial Bank	... Do ...	1875	100,000	1,000
65	Dolpete Rajahani Bank	... Do ...	1875	20,000	800
66	Sri Ramaswami Bank	... Gudibanda ...	1875	20,000	2,000
67	Cantonment General Bank	... Bangalore ...	1875	50,000	2,500
68	Tashum Vilasa Bank ...	... Tumkur ...	1875	30,000	1,200
69	Krishnarajendra Bank ...	... Bangalore ...	1876	2,000	80
70	Roberts' Brewery Company	... Do ...	1876	5,000	200
71	Srikanteswaram Bank	... Sillaghatta ...	1876	20,000	2,000
72	Gangadharaswara Bank ...	... Kortagiri ...	1876	50,000	2,000

From 1873 Government servants have been interdicted from holding such posts as Directors, Managers, Agents, &c., of Banks, and required to sever all connection with Companies established in the District in which they are employed. The duties of Auditor have however been permitted, as an exception to the rule, to be performed by public servants, as they are of a temporary character.

Wages and Prices.

Wages.—The following are returned as the present (1876) rates of wages ruling in the country. For skilled labour, 4 As. to R. 1 a day; unskilled labour, 2 As. to 8 As. a day; cart hire, 8 As. to R. 1½ a day; boat hire, 6 As. to Rs. 4 a day; donkeys, R. 1½ to Rs. 4¾ per score per day.

Though figures for comparison are not available for any long period back, it is a fact well known to every employer of labour that the rates of wages for nearly all classes of work have risen, especially during the last 15 or 20 years. It is said the price of unskilled labour has doubled since 1850, and that of skilled labour risen three fold. The demand created by the opening out of numerous large coffee plantations in the west and by the construction, on a considerable scale, of public works in every part of the country is doubtless sufficient, in conjunction with the general increase of population and wealth, to account for this. According to Buchanan, the wages paid to day labourers in 1800 were about equal to the present minimum, namely, men ⅓ to ½ a fanam, women ¼ of a fanam; or, in the present currency, about 2 As. to 2 As. 8 P. and 1 A. 4 P. respectively.

Of the cost of living some estimate may be formed from the charge per head of dieting the convicts in jail. In 1866—7, a dear year, the rate varied from Rs. 3—4—0 to Rs. 4—6—0 a month. In 1871—2, a cheap year, the rates were—for labouring convicts from R. 1—11—10 to Rs. 2—10—0, and for non-labouring convicts from R. 1—4—11 to Rs. 2—1—2. In 1875, the average was Rs. 2—6—0 per head. It must be remembered, however, that the articles consumed in the jails are obtained in large quantities, wholesale.

Prices.—There are not sufficient statistics available to illustrate the general rise in prices. According to Buchanan, the prices at Bangalore in 1800 were,—ragi, 12 Sultani fanams per kandaga of 200 seers; rice, best sort 28½, coarse 66½; wheat 57. That is to say, ragi was 50 seers for the rupee; rice, 1st sort, 9, 2nd sort 21, wheat 10½. These rates seem high, being perhaps unduly raised by the late wars and desolation. Dr. Heyne's prices for different places between Bangalore and Chitaldroog at about the same period, or perhaps a year or two later, vary as follows,—for paddy or unhusked rice from 18 to 73·8 seers per rupee; ragi, 38·4 to 113; jola, 73·8 to 120; wheat, 6 to 24; horse gram, 11 to 113; Bengal gram 6 to 147·7.

The following comparative statement embraces eleven years past, for which period alone figures have been procured.

Seers per rupee.—Average, or minimum and maximum, quantities.

Years.	Ragi.	Rice, 1st sort.	Rice, 2nd sort.	Wheat.	Jola.	Horse gram.	Dal.	Bengal gram.	Beans or Pallar.
1865-6	20·25	...	9·75	...	...	18·5	12·75	...	...
1866-7	10·75	...	6·25	...	...	...	...	...	...
1867-8	17·5	...	9·5	...	...	15·5	...	...	...
1868-9	35·2	...	11·8	12·1	...	27·8	18·1	12·95	25·04
1869-70	30 to 40	...	10 to 13	6·23	...	27·7	14·19	7·25	14·91
1870-1	34	53	10·2 to 12·7	10·7	16 4 to 7	...	23 to 37	13	6·75
1871-2	35·5	54·5	10	15 12	16 8	10·6	...	26·5	47
1872-3	42	67·5	8·5	15·5	12·2	17 7·4	13·1	24·2 to 74·5	25·7
1873-4	32	72	8·5	17·7	11·2	24·3·7	14	20	52·4
1874-5	28·3	60·6	9	17·4	10	19·7·7	14·2	20	45
1875-6	16	58	8·3	17·7	9·7	22·2·9	22	17·7	45
1876-	8	35	4·2	13·1	5·1	16	6·7	13·6	7

The last year on the list, 1876, closing with a famine, the prices are exceptionally high, and will in all probability rise yet higher before the season of 1877. With these may be compared the prices which prevailed in 1833 and 1866, which were also years of drought or famine. While the figures are doubtless a correct index of the relative severity of the dearth in the several years, they also serve perhaps to mark to

some extent the general ratio in which prices have risen from one period to the other.

Seers per Rupee of grain in years of dearth.

1832—3	Rice, 1st sort	13.5	Rice, 2nd sort	16.5	Ragi	30.75
1866—7		5.5		6.25		10.75
1876—		4.2		5.1		8

Regarding fluctuations in prices of produce as influenced by the seasons, the following remarks are extracted from the Annual Reports.

1855—6.—In the Chitaldroog and Nagar Divisions, the season was rather more favourable than in the preceding year. In the Ashtagram Division it was less so, and in Bangalore there was a total failure of the early rains. As, however, there was a fair average fall throughout the country in July, August, September and October, and as a fourth disastrous season in succession was hardly to be expected, all were sanguine that we were once more to be blessed with an abundant harvest. In this we were doomed to be disappointed; for in November, when a few showers are absolutely necessary for watering the dry crops, there was a total failure of rain, and in the prospect which then became certain of a fourth scanty harvest, prices, already high, at once rose still higher, and grain continued at almost famine rates till the opening of the last monsoon, which in the eastern portion of the Territory set in in a style that had an immediate effect on the market. The long prevalence of these high rates fell very heavily on the non-agricultural classes, but pressed comparatively lightly on the cultivating ryots; for although their crops were scanty and vast numbers of their cattle died for want of forage, yet the prices which they received for what remained of their crops was so high that they were able to pay their rents with ease, and to replace their farm stock.

1856—7.—The season commenced auspiciously, and the rains of the south-west monsoon were for the most part steady and regular. There was, however, a partial failure of the north-east monsoon, in consequence of which the dry crops in some taluks of the Ashtagram Division were withered up, and the yield of the batayi crops in all the Divisions, more particularly in Bangalore, was much less than in the preceding year. The harvest altogether was below the average, but the prices of all grains were steady and remunerative, and the ryots would have had no serious cause of complaint had there not been a most fatal murrain among cattle which spread havoc through the country.

1857—8.—The season has been the sixth bad season in succession with which Mysore has been afflicted. In the Ashtagram Division it is true that it was less unfavourable than it had been in the two preceding years, but in the other three Divisions it was worse if possible than the previous ones. The

south-west monsoon came down in scattered showers and was altogether insufficient and partial. The north-east monsoon was more copious, but still not what it usually is, and altogether insufficient to make up for what had been wanting from the south-west. In consequence of this, a large expense of land cultivated with wet crops was left untilled in the Bangalore Division. In Chitaldroog the harvest was only one-third of what is considered an average crop. In Nagar the supari gardens are regarded as having suffered lasting damage, except in those favoured spots where the irrigation is derived from lakes fed by perennial springs. In Ashtagram alone the prospects of the ryots were brighter than they had been for some time before.

1858—9.—The season, although not favourable, was on the whole better than the preceding. The south-west monsoon almost totally failed, and gave rise to the apprehension that another bad season was about to follow the five highly unfavourable years which immediately preceded the past; later in the year, however, copious rain fell; all those tanks which were strong enough to stand the rush of water were filled to overflowing, but in many places great destruction ensued.

1859—60.—On the whole, the past season commenced more favourably than the four seasons immediately preceding; the copious showers of the south-west monsoon giving the promise of an abundant crop of dry grain. But unfortunately the hopes then formed were to a great extent disappointed by a considerable defalcation of the rains of the north-east monsoon, on which the wet cultivation chiefly depends, and which are required to bring the dry grain to maturity. The consequence has been a great increase of prices throughout the Territory, without, however, causing serious distress, the wages of labour having risen in about the same proportion.

1860—1.—The season was not a good one. It was not quite as bad as some that have preceded it since 1853, but the almost entire failure of the latter rains caused a very serious loss both in the quantity and quality of the crops. In the Malnad taluks even the south-west monsoon did not pour down with its usual abundance, and the consequence has been a failure both in garden produce and rice. Many of the wells and streams in those parts dried up so completely as to inconvenience very seriously both the inhabitants and their cattle. In the Chitaldroog Division, the rains ceased abruptly at the end of August, and not a single shower fell in that District during September or October, the most critical period of the season for the crops. In some exceptional parts of the Province, the harvest was very fair in quantity, but these spots were few and far between, with the exception perhaps of those taluks to the southward, where the wet lands are supplied copiously with water by the channels drawn from the Kaveri and other rivers. Two reasons exist for the non-appearance

of actual famine in some parts. The first being the habit which prevails in this country of storing the surplus ragi in underground pits, from which it is withdrawn in times of scarcity, as the grain will keep sound and good for 40 or 50 years. The second reason was the extraordinarily high prices which all kinds of produce realized. In fact every article of consumption rose during the latter year in value, and the ryots and garden cultivators were thereby enabled to pay their khists and hire; whilst the poorer classes and labourers received a higher rate of wage than has ever previously been known in Mysore. But the high prices press very heavily on all people of fixed incomes.

1861—2.—The season was decidedly the best for some years past, and had the latter rains been as copious as those of the early part of the season, the ryots would once again have begun to think that the days of abundant harvests which they knew prior to 1853 were about to return. But the Nagar Division did not fare so well as the others. It would appear that as soon as the ryots of Nagar became apprehensive of a short monsoon, they began sowing the rice lands with dry crops. A subsequent heavy downpour in many cases destroyed these also. As compared with former years, high prices continue to rule in Mysore. People have given up hoping for the return of those days when grain that is now 20 seers was sold as low as 60, 70 and even 80 seers for the rupee. The only solution of this state of things is increase of population, and consequent higher prices, the daily increasing facility of communication, and the decline in the mercantile value of the current coin of the realm. Not even in the most remote parts of the country will a rupee now purchase the quantity of grain which could have been bought with it a few years ago.

1862—63.—In Bangalore the season was considered generally favourable. In Kolar, though the rains were irregular, the outturn of the crops was considered superior to that of any harvest for 10 years. In Tumkur the season began favourably with showers in May, but owing to the failure of the rains anticipated in June and July, and the prevalence of boisterous winds, some loss was experienced and the land had in many places to be resown. The latter rains were abundant, and the tanks generally received an adequate supply of water without injury. The yield of ragi was a full average, but there was a partial failure in some of the pulse crops. The grain harvest in Ashtagram was one of the best known for years, but the season was unfavourable to tobacco, supari, chillies and some other products. The season throughout the Nagar Division, as compared with that of the previous year, was generally more favourable, notwithstanding a diminished rainfall, but it varied much in the three Districts and cannot be pronounced to be a good year. The prices of the principal grains were lower than in 1861—2, but are still considered high with reference to those prevailing a few years ago. Cotton was in great

demand, the exports to England having completely cut off the supply from Bellary and other cotton growing districts, and the price was higher than it has ever been known to be in Mysore.

1863--4.—The dry cultivation in the Nundidroog Division was extensive, and the ragi crops were generally good, though, consequent on the failure of the latter rains, the prospect of an unusually heavy crop was not realized. The grain crop was below the average and the later pulse crops almost entirely perished. The north-east monsoon in November and December completely failed and the cultivation of wet lands was therefore limited. In Ashtagram the season is reported to have been on the whole very similar to that of the preceding year. The whole wet crop throughout the Division was that of a good average year, but the dry crops, except in the taluks bordering on the Malnad, were as a rule unfavourable, and failed from want of rain, or rather from unseasonable weather, partial showers and sometimes heat destroying the plants. In Nagar the season generally was unfavourable, the rains being scanty and for the most part unseasonable. The latter rains almost entirely failed. Nearly all the tanks were consequently dried up, and the people and cattle suffered much.

1864—5.—In the Nundidroog Division the season was on the whole a favourable one. The paddy crop reaped in November was abundant and made up for a deficiency in the May crop, which suffered from the want of a sufficient supply of water in the tanks. The dry grain harvest was an average one. From the Ashtagram Division the report is not so favourable. In Nagar the season was generally unpropitious, scarcely a shower of rain having fallen in the 6 months from October to March. After the first showers in April, a small smooth brown caterpillar made its appearance in a portion of the Division, and in a few days ate up every green thing, the grass assuming the appearance of having been burnt up. Both monsoons were characterized by violent storms of wind and rain which did much damage to public works and cattle. The price of agricultural produce of all kinds is still high.

1865—6.—A year which commenced with abundant rain and every prospect of plentiful harvests, became, as it ran its course, less and less promising, and in its latter months ended in drought, sickness and heavy mortality. The high prices which have everywhere prevailed have been more disastrous to the mass of the people than they have been advantageous to the purely agricultural portion of it. Indeed the ryots themselves have exported so much grain, owing to the extravagant rates which ruled in the markets in the cotton growing districts of Bellary and Dharwar, that the boarded supply of years which formerly filled their grain pits has been well nigh exhausted, and there has therefore in many places been apparently an absolute want of seed for sowing

purposes. Among the officials and the non-agricultural classes there has been much distress, and the failure of the ragi harvest has been a most serious misfortune to the population generally.

1866—7. The immediate cause of the distress in the past year was undoubtedly the failure of the early rains of 1866 succeeding upon the scanty harvest obtained in the previous autumn. The ryots had moreover to a great extent neglected the provision which it has been customary to make against bad seasons. Grain was largely exported to supply the necessities of districts to the northward, where the cultivation of cotton had in a considerable degree superseded that of food grains. The drought made itself felt more or less throughout the Province, but no where so severely as in the taluks lying along the northern and eastern frontiers. Before the month of June, the scarcity of food had grown into a famine of an appalling character. The people were driven to feed on the kernel of the tamarind fruit and cotton seed reduced to flour, and even on leaves and roots. Villages were deserted by their inhabitants, who fled to other parts of the country in search of food, and from the instances that came to notice it is to be feared that deaths from actual starvation were not of rare occurrence. Sickness was speedily engendered by the deleterious food, and cholera, dysentery, and fever carried off large numbers of people. In the absence of any pasturage, the cattle suffered severely, and in one taluk alone (Molkalmuru) it was calculated that 6,249 head of cattle, and 13,130 sheep, goats, &c., were carried off between the months of January and August. (The deaths among cattle this year amounted under all heads to 373,875). This state of things was fortunately limited to one portion and that a comparatively small portion of the Province, but the effects of the drought which continued till the month of September, when rain fell copiously, were felt in a greater or less degree in every district, and caused much misery and suffering among the poorer classes.

1867—8.—Compared with the condition of things last year, the ryots and people of all classes have reason to congratulate themselves on the seasonable rain and consequent good pasturage. The price of grain has fallen in all districts, 25 and 50 per cent and even lower. This is especially noticeable in Chitaldroog District, where 23 seers of ragi instead of $9\frac{1}{4}$ can now be purchased for a rupee.

1868—9.—The great fall in prices of grain and other produce induced cultivators to give up large tracts of the more heavily assessed land.

1870—1.—The harvest was generally a most luxuriant one, and the price of grain of all kinds fell to a point which brought a full supply of good and wholesome food within the means of the poorest classes. These low prices

have however been productive of loss to the agricultural classes, who in some instances have experienced a difficulty in the disposal of the produce of their fields without submitting to a heavy sacrifice.

1871—2.—The harvest was generally good, and the prices of grains of all sorts continued to decline. The wages of labour have not as yet been affected by the decrease in the cost of food. The fall in the value of produce has however been attended by considerable relinquishment of land, chiefly on the part of speculators, who appear to have taken up land wherever it could be obtained during the period of high prices, and who doubtless in many instances have found it no longer worth retaining.

1873—4.—The year was on the whole not favourable for the crops. During June and July there was an almost total failure of rain. In August and until October rain fell in abundance, but the late rain was also deficient.

1874—5.—Notwithstanding that the year had been a favourable one for agriculture and the harvest good, ragi, the principal food of four-fifths of the inhabitants, was dearer. On the other hand the price of rice and the minor pulses was somewhat lower.

1875—6.—A rainfall only half that of the previous year, and two-thirds the average of the past five years, seriously affected the outturn of crop. To make matters worse, this short rainfall was in many places unseasonable. The south-west monsoon gave 19 inches, while the north-east yielded only 2 inches. The eastern Districts, which are to a certain extent dependent on the north-east monsoon rains for a good harvest, suffered more than the westerly Districts, where moderate crops were harvested. The price of food grains ruled high. The great rise in the price of the staple food of the Province pressed heavily on the poorer labouring classes. Owing to want of fodder and scarcity of water, the loss among agricultural stock was very great.

ADMINISTRATION.

Under the Early Hindu Rulers.

Of the ancient forms of government some information may be gathered from inscriptions, but not in much detail. The Mahá Pradhána, Sarvádrikári, or prime minister was at the head of affairs, under the Raja or King, with whom was generally, when of sufficient age, associated the Yuva Raja, or heir-apparent to the throne; and a number of other mantris or counsellors assisted in the deliberations of state. Many of these were Mahá Mandalesvara or high nobles, the hereditary chiefs of principalities. The State was divided into several large provinces, each placed under a governor, generally styled the Dandánáyaka or Dannáyaka, who seems to have combined civil and military functions, and in newly acquired territories was often a *senádhpati*, *chamupati* or general. He exercised control over the *sámanta* or feudatory chiefs within his jurisdiction, (the pálegars of later times), whence he had the title of Mahá Sámantádhpati. The title of Heggade or Pergade seems to have been sometimes borne by the provincial governors.

For revenue matters there was a considerable body of *karnams* or revenue accountants, who were no doubt chiefly Brahmins, as at present. The excise appears to have been either farmed out, or managed by an agent appointed by government, and is referred to under the different heads of *hej-junka* or *perjunka*, that is the large sunka, or customs dues on the chief articles of trade, and the *kirukula*, or miscellaneous duties on articles in which the transactions were small. There is often mention of another official under the name of *oḍḍa byavahári* and *oḍḍa rávula*, whose functions are not clear, but seem to have been something like those of a commissariat agent for the army.

The chief divisions of the country had each their revenue value affixed to their name. Thus we have invariably the Banavase Twelve Thousand, the Nolambaváḍi or Noṇambaváḍi Thirty-two Thousand, and the Gangaváḍi Ninety-six Thousand. One inscription mentions the Púnáḍ or Punnáḍ Ten Thousand. Sometimes the numerical designation alone

was used, without naming the country. Thus one of the oldest inscriptions speaks of the Ninety-Six Thousand country and one of the 12th century describes the Hoysala king as ruling the Seven half-lakh region (*saptārdha laksha prithvi*). A similar name still survives in that of one of the present taluks of Coorg, which is called the Yēlusāviraśhime or the Seven Thousand country. Whether the reckoning has reference to the amount of revenue realized, as seems likely, or to extent of cultivation, or to what other denomination of value, is not certain. The nomenclature still lingers in parts of the Malnad, where I was told by an inferior native official that his jurisdiction extended over 14 villages, which constituted, according to the custom of the place, a Thousand country. The inscriptions of the Karkala rulers refer to the Kalasa country as being administered by three Hebbār, each the head of a Thousand country. Smaller circles, called such and such a Seventy, frequently recur in inscriptions ; as well as divisions termed *khampana*, *ventya*, &c.*

The chief men of náds or rural circles were the *gāmunḍa*, a word which, after becoming *gaunḍa*, now appears as *gauḍa*. They seem to have represented and been responsible for the agricultural classes, as the *paṭṇa sheṭṭi* or town mayor was for the mercantile and industrial classes.

The Village Twelve.—The constitution of the village corporation, the unit of the body politic, and basis of administration at all times, is thus graphically described by Wilks.

‘Every Indian village is, and appears always to have been, in fact, a separate community or republic; the *gauḍa* or *paṭél* is the judge and magistrate; the *karnam* or *shānbhóg* is the registrar; the *talári* or *sthaliwar*, and the *tóṭi*, are severally the watchmen of the village and of the crops; the *nírgaṇṭi* distributes the water of the streams or reservoirs in just proportion to the several fields; the *jotishya*, *joisa* or astrologer performs the essential service of announcing the seasons of seed time and harvest, and the imaginary benefit of unfolding the lucky or unlucky days and hours for all the operations of farming; the smith, and carpenter, frame the rude instruments of husbandry, and the ruder dwelling of the farmer; the potter fabricates the only utensils of the village; the washerman keeps clean

* An old report explains the terms thus. A country yielding 100 nishka (said to be pagodas) is called a *shima* or *kshetra*; 18000 *shi* va form a *khampana*; 2 *khampana*, a *ventya*; 33 *ventya*, or 33 *ventya* and 12000 *shima*, a *phanichhāsana*. The latter name is properly *panichchāsana*, which means 12000. The above scale applies it to a country yielding 12 crores of nishka or pagodas.

the few garments which are spun and sometimes woven in the family of the farmer, or purchased at the nearest market ; the barber contributes to the cleanliness and assists in the toilet of the villagers ; the goldsmith,* marking the approach of luxury, manufactures the simple ornaments with which they delight to bedeck their wives and their daughters : and these Twelve Officers, styled the Bārabalúti or Ayangadi, as requisite members of the community, receive the compensation of their labour, either in allotments of land from the corporate stock, or in fees consisting of fixed proportions of the crop of every farmer in the village.

In some instances the lands of a village are cultivated in common, and the crop divided in the proportions of the labour contributed, but generally each occupant tills his own field ; the waste land is a common pasture for the cattle of the village ; its external boundaries are as carefully marked as those of the richest field, and they are maintained as a common right of the village, or rather the township (a term which more correctly describes the thing in our contemplation), to the exclusion of others, with as much jealousy and rancour as the frontiers of the most potent kingdoms.

Such are the primitive component parts of all the kingdoms of India. Their technical combination to compose districts, provinces, or principalities, of from ten to a hundred thousand villages, has been infinitely diversified at different periods by the wisdom or caprice of the chief ruler, or by the vigour and resistance of those who, in every age, country, and condition, have coveted independence for themselves and the power to govern the greatest possible number of their fellow creatures. Manu's scheme of government recognizes none of those persons who, in later days, were known by the several designations of Wodeyars, Palegars, Zamindars, Deshayis, &c., all in their respective jurisdictions assuming, when they dare, the title of Raja or king. All the officers enumerated by Manu have, in their several scales, at different periods, simply acted as agents of the sovereign ; as farmers of revenue contracting with the sovereign for a certain sum and levying what they can ; as partisans or chiefs of troops, receiving an assignment on revenues managed by another, or the direct management themselves, for the purpose of defraying the pay of the troops. In these several capa-

* In some parts of the country, the goldsmith is not found included in the enumeration of the Twelve, his place being occupied by the poet, a less expensive member of the community, who frequently fills also the office of schoolmaster.

cities they may have continued obedient to the sovereign who deputed them ; they may have obtained from his favour, or from his fears, a remission of a part of the sum to be accounted for ; they may have rebelled and usurped the whole government, or have established a small independent principality, or a larger : but with regard to the villages or townships of which the principality is composed, they have appeared but in one character, *viz.* the government, the sovereign : a person exercising the sovereign authority on his own account, or by delegation on account of another. The interior constitution and condition of each separate township remains unchanged ; no revolutions affect it ; no conquest reaches it.*

It is not intended to assert that the village in our contemplation may not have produced the Cæsar of his little world ; the rights of the inhabitants may have been invaded by the patel, by the palegar ruling over twenty, by the wodeyar ruling over thirty-three, by the collector over two hundred, or by the sovereign of twenty thousand townships ; each or either of these persons may have attempted, or have succeeded, or have failed, in persuading or forcing an augmentation of the proportion of money or of grain paid by the township to the state ; but conquests, usurpations, or revolutions, considered as such, have absolutely no influence on its condition. The conqueror, or usurper, directly or through his agents, addresses himself as sovereign, or representative of the sovereign, to the head of the township ; its officers, its boundaries, and the whole frame of its interior management remain unalterably the same ; and it is of importance to remember that every State in India is a congeries of these little republics'.†

Revenue System.—The adjustment and mode of realizing the land revenue was the great, or almost the only, problem of civil government which formed the subject of legislation under the various dynasties of native rulers, and in this branch of the administration alone, therefore, are any regulations referred to as emanating from the ancient rulers.

* Every village, with its twelve Ayangadis as they are called, is a kind of little republic, with the patel at the head of it ; and India is a mass of such republics. The inhabitants, during war, look chiefly to their own patel. They give themselves no trouble about the breaking up and division of kingdoms ; while the village remains entire, they care not to what power it is transferred, wherever it goes the internal management remains unaltered ; the patel is still the collector and magistrate and head farmer. From the age of Menu until this day, the settlements have been made either with or through the patel.—Report by Lieut. Col. MUNRO.

† The Village Community of India exhibits resemblances to the Teutonic Township which are much too strong and numerous to be accidental, observes Sir SUMNER MAINE, whose works on this subject are of great interest.

With reference to the land settlement of the Kadamba kingdom, the following particulars are given in a report by Mr. H. Stokes.

Kadamba Raya with Gopa mantri and Naga Deva Karnika caused to be measured,* between Nagara khanda and Varada khanda, all the land within the limits of each village, that had been or was fit to be cultivated, and marked its boundaries by stones. In the year Kilaka, Sal. 90 (A. D. 163) Gopa mantri made the bijavari and assessment as follows. One grain from each of the *nava dhanya*, or nine kinds of produce (paddy, wheat, hesaru, uldu, kadale, jola, avare, togari, and ellu), being taken to form one nishka, 10 nishka were called a phala or navtakku; 64 phala, a mána; 20 mána, a kolaga; 20 kolaga, a khandaga. But in some places 40 or 60 kolaga formed a khandaga.

For watered land of the best quality, namely, black soil near a river or mountain, red soil, or black mixed with yellow and containing springs, there were three rates,—18, 21 and $9\frac{1}{2}$ (pagodas per khandaga). Black land, suitable for wheat and kadale, paid 1 pagoda for every $9\frac{1}{2}$ mána of seed. Watered land of white soil mixed with sand, near a hill, paid 7 pagodas for every khandaga. Similar land near a river paid $5\frac{1}{2}$. White or red land watered by a well, paid 9 pagodas per khandaga.

A garden containing areca nut, cocoa nut, plantains, limes and citrons was called *agana*, and was measured with a rod 18 lengths (*mettu*) of a man's foot, measured so as to take in also half the right foot at the beginning and half the left foot at the end.† This rod was called *mána danda*. In the square of such a rod might be planted 3 areca nut trees, with cocoa nuts intermixed; and for a 1,000 such squares the king's share was 7 pagodas, the other productions being included in the assessment. Of a garden containing vines, sugar cane, dates, betel leaf, cocoa nut, mango, jack, sampige, ashoka malagi, jessamin and such choice plants together with areca nut, the produce might be estimated at 25 pagodas, and one third of this was the king's share. In 2 of the above rods 3 cocoa nut trees might be planted, and the king's share was half a nishka and 5 nuts on 10 trees.

Of the assessment under the Hoysala Ballála kings the same document says,—Under them each cultivator paid to the king one iron *kula* or bar (?ploughshare). This was dropt into a well of quicksilver

* With a line of 6 báhu,—each báhu being 2 cubits,—at either extremity and in the middle, for both length and breadth, and the mean of the three measurements taken for each.

† The rod used was measured by the feet of Dharadwaja Haritika (perhaps a guru). This corresponds with Sivappa Nayak's standard for the *daya*. See further on,

in the temple of Padmāvati at Humcha and became gold. Hence the word *kula* came to be applied to a ryot, and the money paid by him is still called *kulavana*. In the time of the Vijayanagar kings, it is added, the well dried up, and the iron ploughshare was commuted for a payment of one pagoda for every plough. (See p. 217).

Under the Vijayanagar Sovereigns.

For the later system of government, under the Vijayanagar empire and the governments which succeeded it in the north of Mysore, the following particulars, greatly condensed, have been taken from the Mackenzie Mss.

It appears that in the time of Krishna Raya and Achyuta Raya the revenues of the Vijayanagar State were first reduced to a regular form, checked by ordinances, and a system of accounts and management introduced, calculated to improve the revenue of the empire gradually in yearly amount without distressing the inhabitants.*

In the course of their conquests the kings of Vijayanagar reinstated some of the original rajas in their ancient possessions on submitting to be tributary vassals to them as superior lords. They also appointed some of their own slaves and servants, recommended by their fidelity and abilities, to manage tracts of uncultivated waste country, with instructions to clear away the jungles and to bring the lands into culture, with a view of increasing population, the wealth of the state, and the prosperity of the land by good management. By the royal commands, these governors formed many *Pályams* or *Pálegats*, and new establishments, cleared away the jungle, and recovered the country from the robbers and lawless banditti who infested it, and from the wild people of the hills. Those who established Pályams under these sovereigns were distinguished by the title of *Pálegars* (polygars).

When they had thus settled these Palegars, and appointed various other officers for the management of these woodland countries, they then formed regulations to improve the revenue, and published the *Ráyarékas*, which fixed the settlement of the revenues, the boundaries, duties and customs, and made ordinances for all other affairs. These were transmitted to the headmen of the towns and náds for preservation as records

* The empire at this period had acquired its utmost extent, by the reduction of several extensive provinces, particularly the northern districts, which increased its revenues in their reign to 81 crores of Avakoti chakras or pagodas: this increase of revenue and territory, it would appear, suggested the expediency of a more general and comprehensive system, better adapted to the various tribes and nations now reduced to one common sway.

The system of letting out the lands in perpetuity, as appears in some instances, prevailed sometime previous, in the reign of Harihara Raya, and perhaps existed long before.

of this settlement, for reference on future emergencies, or disputes about revenues, boundaries, &c. At the same time, landmarks and stones, inscribed with writings or with symbols, were erected on the boundaries even of every little village. Unto our times the custom generally prevailed in the Bala Ghat of referring to the Ráyarákas when any doubts occurred on these points.

The words *Atthavane* and *Síma málam* were applied to the Revenue department. The Military branch was called *Kandáchár*. The following terms were also used in the management:—

Karnataka ancient names.	Corresponding Mussalman names.	Meaning.
Síma...	... Mulk	... Great Division or Province.
Gadi	... Táluq	... District.
Hóbali, hóbli	... Taraf	... Sub division or inferior district.
Halli	... Gaam	... Ancient village.
Kaluhalli	... Majara	... New additional village.
Aramane	... Huzúr or Mahal	... Presence or Palace.
Samsthán	... Riyásat, Sarkar	... The Government.
Umbalike	... Jaghur	...
Bhatavritti	...	Lands given away to Brahmans.
Sróttriyam	...	Lands granted in perpetuity, for which the proprietors receive a yearly money rent from the occupiers.
Agraháram	... Inám	... Lands or villages granted in charity, generally to Brahmans; or free gift.
Brahmádayam, Devádayam	...	Shares of the crop given to Brahmans.

The following offices were hereditary, and established in all towns and villages, under the general name of *A'yagár* in Canarese and *Bára Balúti* in Hindustani :—

- | | |
|--------------------------|--------------------------------------|
| 1. Shanbhog, accountant. | 7. Náyinda, barber. |
| 2. Gauda, head man. | 8. Mádiga, shoe maker. |
| 3. Kamhára, iron smith. | 9. Akasále, goldsmith. |
| 4. Badagi, carpenter. | 10. Talári, watchman of the village. |
| 5. Agasa, washerman. | 11. Nírganti, watchman of the tanks. |
| 6. Panchángi, kalendar. | 12. Kumbára, potmaker. |

The *A'yagár* depended on the financial or revenue branch. The ryots gave them a share, called *nijáyam* and *ardháyam*, of the crop produced in their village; these were for each kapila, bed, kandi or puttí, varying according to regulations established anciently in different parganas. The *nijáyam* above the Ghats was 4 seers or measures of grain, and the *ardháyam* 2. *Mányams* or privileged lands were also allowed to the Ayagar, for which they regularly paid the *júdi*, a small tax from which none of these official hereditary estates were exempt except the *Panchángi*.

To the *Shanbhóg*, as accountant of the village, the ryots paid the full *áyam*. If he had a share of any charity lands from the inhabitants or from the *Sarkar*,

he paid the *jóli* to Government: to him and to the head *gaúda* the inferior classes rendered their rents or shares of the revenue.

The duty of the *Gauḍa* was to see that the farmers cultivated the land for the *kandáyam* or rent agreed on in the *jamabandi* or annual settlement; to collect the revenue composed of the different branches, duties, &c., and to pay it to the proprietors of the districts according to the *kist* or agreement; to adjust all accounts relating to these at the end of the year; and then to settle the rent of the ensuing year according to the estimate made by the *Amildar* by order of the Government. But in adjusting these concerns it frequently happened that, the ryots having no access to people in the higher offices, parcels of lands were unaccounted for, and their produce clandestinely secreted by the *gaudas* and *shanbhogs*, which they collusively divided among themselves.*

The *Kammár* or ironsmith, and *Baḍugi* or carpenter, had to supply the ryots with ploughs and other implements of husbandry without taking any price for the same. If a ryot wanted to build a house, he must then pay some consideration to these artificers; but they paid nothing for the public duty, such as ploughs, buckets, &c., for which the *hore-hullu* and *mura-batta* were assigned.†

The *Agasa* or washerman, and *Náyindu* or barber, must wash and shave gratis for all the ryots of a village; the latter also dressed wounds and performed other surgical operations—for this they received *hore-hullu* and *mura-batta*. When the washerman delivered the cloths after washing, he received provision sufficient for one day. The washerman paid annually some money to the *Sarkar* for the rent of the drying ground.

The duties of the *Panchúgi* (always a Brahman) were to mark the proper times for sowing the great and small grains in their right season; also to declare from the calendar the fortunate time for commencing any new undertaking. This Brahman also officiated as priest, to perform the ceremonies of funerals and marriages according to the laws. He must daily attend the headman of the village, and from his calendar read off the day of the week, month and year, the predominant signs and constellations, &c. For these duties he collected the *hore-hullu* and *mura-batta*.

* The clandestine embezzlements happened from the following causes.—From the *Gauda* and *Shanbhog* taking advantage of the timidity of the ryots, who were afraid to discover the frauds of people under whose control they had lived time out of mind, their offices going from father to son. The ryots were so very timid that they were even alarmed to see the jeons of the *Sarkar*.—The *Gaudas* having full authority to settle the revenue of the village, and the ryots generally requiring extension of time, particularly when the *Sarkar* augmented the rent of a village, these *gaudas* had it in their power to distress those who displeased them by overrating their proportions and selling their effects and cattle at a reduced valuation, and thus utterly ruining those to whom they entertained a grudge. The ryots for these reasons endeavoured to preserve a good understanding with these officers, that they might not be exposed to extraordinary impositions.

† *Hore-hullu* seems to be a bundle of straw: *Mura batta*, some portion of grain.

The *Māḍiga* or chuckler, furnished shoes, ropes, leather buckets, and other little necessities for cultivation, for which he was entitled to the *āyam*, *hore hullu* and *mura batta*.

The duty of the *Akasāle* or goldsmith was to measure the *songuru* or half share of the crop which the ryots paid to the Sarkar, and to shroff the money collected in the village in payment of the revenue. For any other work done by him he might take payment, but for these the *hore hullu* and *mura batta* were his perquisites.

The *Talāri* was the police officer or kotwal of the inferior villages. Besides the *nijāyam* and *ardhāyam*, and the *mānyams* allowed for their maintenance to encourage them to a due performance of their duties, the ryots privately bribed them with *rāgi*, vegetables and *conks* (?) in the harvest time, to conciliate their favour and protect themselves from certain inconveniences, such as being forcibly delivered over to travellers to carry burdens to the next stage, &c. The appropriate duty of the *Talari* also was to watch over the safety of the village, and to be ready to provide forage and conveniences for those employed by the Sarkar. He was responsible for all things stolen within the enclosure of his village : whatever was lost or stolen on the highways, or without the precincts of the town, was to be recovered or accounted for by the *Kāvalgīrs*. People of all castes were employed in this station, except in the *Chitaldroog* country, where only the *Boyis* or *Bedars* acted in this capacity.

The *Nirgaṇṭi*'s duty was to attend to the tanks and to shut up, when necessary, their sluices or *tūbus* with the stoppers usually fitted for this purpose ; in the winter time he must watch carefully on the banks of the tanks to preserve the water. It was his appropriate duty to divide among the ryots of the village what water was requisite for the production of the crop ; when the water diminished, he rendered account thereof to the managers, lest he be suspected of disposing of it clandestinely. For these duties he received *hore hullu* and *mura batta*.

The *Kumbāra* or potmakers were not stationed in every village, one or two being generally sufficient for a *bobli* or *taraf* ; he furnished pots for all the ryots of his *taraf*, and was entitled to *āyam* in an equal proportion as the other *Ayagār*. For liberty of exposing his wares for sale to travellers in the markets, he paid *chakra-kānke* to the Sarkar.

The above twelve were the village servants ; their offices were hereditary, going from father to son ; and they were authorized to sell or mortgage their office when in distress.

From 10 to 40 villages were called a *Hūli* or *Taraf*, and from 4 to 10 of these constituted a *Gaḍi*, called *pargana* in the Northern Sarkars.

From 10 to 20 of these gaḍis, annexed to a *kasla* or capital town, constituted a *Sima* or country ; a name in latter times applied to provinces of considerable extent, in like manner as the *Nāds* more anciently. The chief officer of a gaḍi was the *Pārpattegūr*, at present an *Amildar* ; of a hobli, the *Nāḍiga* ; of a village, the *Gauḍa*, in whose absence the *Shanbhog* was the chief. The chief Governor or magistrate of a *Sima* was an officer of great consideration, distinguished by particular titles, applicable to circumstances under the several States.

The *Sarvādāhikārī* or *Aṭṭhavaṇe Pārpattegar*, the chief director of the Revenue, arranged the forms of accounts, and issued all orders relating to that Department, and for the improvement or increase of the collections ; but he could do nothing, even in the most trivial matters, without the Raja's knowledge and permission. In his office the renters of villages settled their accounts. In the time of the Chitaldroog rulers, the chief managers employed the *gaudas* to direct the cultivation of the lands, and the revenue was collected by the *nāḍiga* appointed for the hobli from the *Aramane* or Palace : the *nāḍiga*, at the end of the year, accompanied by some of the principal *Désasts* or inhabitants, went to the office of the *Aṭṭhavaṇe* to clear the accounts of the preceding year, according to the settlement or agreements made in the beginning of the year. These customs were observed by all the Carnatic *Palegars* above the Ghats. The *gaudas* collected the rent from the *ryots* according to the settlement of the *Aṭṭhavaṇe* office, and paid it in to the *Pārpatti* appointed by Government. If the managers of the *Aṭṭhavaṇe* found it necessary to introduce any new regulation, after stating the same to the Raja and obtaining his consent, they transmitted orders under the royal signature and seal to the *Pārpattegars* of the districts for execution.

The *land rent* consisted of that for land sown with one *koḷaga* of seed, at rates equal to from 3 to 10 *Kanthiraya pagodas* according to the nature of the soil. Land watered by *kapiles* was let for a money rent ; but for lands cultivated with paddy by means of tanks, the *songaru*, or one half of the crop, was generally required, without any money, though in some districts the *ryots* rendered *mūgaru*, or one-third of the produce, with 2 or 3 *pagodas* in money for each plough. Waste lands were let to strangers at first for small sums (called *bhūmūla gutta* or *kola gutta*) for a term of years, according to agreement, after which they were annexed to the cultivated tracts and brought under the same management.

Gardens and plantations were numerous in the districts of Madgiri, Sira, Banavar, Chanraypatna, Nagar, and in those adjacent to Seringapatam, from the collections of which (called *ágram*) the Government derived a considerable revenue. In the Mysore country great quantities of areca nut, and cocoa nut; and in Nagar, pepper and other kinds of spices were cultivated in these plantations. These gardens were considered as belonging to the wet land, or *nirávati*, for which the Government collected the rents in some cases from the soil, and in others from a share of the produce. These regulations appear to have been established of old, so far as 1,000 years ago, as observed in some inscriptions in the Banavar district.

Besides the land rent, there were several heads of customs, duties, taxes, &c., which the nadigas (or tarasdars) collected from the different trades. The inhabitants were divided into three classes,—*Jiráyati*, *Bagair Jiráyati* and *Khushbásh*. The *Jiráyati* were those who cultivated the soil; *Bagair Jiráyati* those from whom the Government derived revenue by other means. The *Khushbásh* were those who led a free life, the servants of the Sarkar and others, who were exempted from paying any revenue or taxes.

The revenue derived from the *Bagair Jiráyati* yearly for the privilege of exercising their trades, for rent of the houses (*mane gutta*), &c., according to their stations, was carried to account in the revenue lists under the head of *mane-báb*. The duties paid by the shopkeepers in towns and villages, exclusive of the customs at the several places or *kattés* where goods were exported and imported, were included in *angadi gutta*. The *A'yagár* and others who enjoyed lands in consequence of their offices or gifts, in some places accounted for one-third or one-eighth of the produce to the Sarkar, according to the usual custom of these places; this was carried to account under the head of *jódi* and *mane-gánike*. In the countries about Seringapatam and Chitaldroog, the toddy of the íchalú or country date was used for distillation, there being few palmyras: the palanquin bearers, or caste of Bestars, also made arrack from sugar, the hippe flower, and some from the bark of a tree; these people, for permission to sell this spirituous liquor, paid a certain revenue to Government, called *kallali*.

In the *Sunkam* or customs, there were three different heads. Customs on goods imported to be sold at one place were called *sthalá-dáyam*; customs taken for goods in transit through a district were called

mārgadāyam ; customs taken for goods exported to foreign countries were called *māmulādāyam*. Under these heads the land customs were collected at the different *kaṭṭes* or custom houses. All kinds of goods, even firewood and straw, paid these duties, excepting glass rings, brass pots and soap balls. There were no particular regulations for the rates of collection of land customs ; the Government farmed out the *kaṭṭes* to renters, who took various measures frequently for increasing the perquisites of their respective *chaukis* at the expense of others. For instance, they advanced money to some of the merchants, requiring only one half the duty which was paid by others, thus encouraging them to come by their *kaṭṭes*, where they paid reduced customs, with a view of inducing others to follow the same route. It is impossible to fix on any certain rate in collecting customs on goods imported. When one farmer demanded 10 pagodas for 100 loads, another took only 2 pagodas, and their rates widely differed as collected in various places. These farmers, from the collections of the customs on different descriptions of goods and trades, paid the amount of the agreed rent to the Sarkar, reserving the profits, which were more or less considerable according to circumstances.

The butchers for liberty of purchasing sheep at the first price from the country and selling them in the markets for a certain profit, paid yearly a tax called *kaśāyi-gutta*, which was carried to account in the settlement of the *jamābandi*. The washermen, for liberty to wash and bleach their cloths on the banks of rivers, tanks, &c., paid the tax *ulbe gutta*. In the winter season, a certain class employed themselves in collecting black sand and earth in channels from the hills, from which they smelted iron used for agricultural and other uses. This ore was smelted in a kind of furnace or large fire-stand called *hommel*. For permission of cutting down wood for charcoal and for digging the ore they paid a yearly revenue called *homla gutta*, proportioned to the quantity of iron made in the district.

The Kurubas or weavers of *kambli*s, and the *Julāys* or manufacturers of cotton cloth, for liberty to sell their goods to the merchants, paid to the Government a duty for each loom, rated according to the quantity of the manufacture, which formed a separate branch of the revenue called *jakāyati*. The weavers paid no duties to the land customers for the goods they disposed of in their own villages ; but the merchants who transported the cloths from one place to another must first pay the customs previous to exportation. The weavers generally preferred disposing of their goods to the merchants of their own place. In some places the weavers paid a trifling tax, called *kaddivaram*, to the collec-

tors of the sunka. For the privilege of making oil, the oilmakers paid yearly *gánige gutta*, a rent for their *gáras* or mills for grinding oil seeds; for this the Sarkar provided a great tree for the mill and a place to erect it on: and none other was permitted to manufacture oil in the village except him who paid this rent.

The Government used to appoint some aged men of the several inferior classes to be the heads of their respective castes, and to administer justice. These Headmen, on any complaint against their people, should investigate it and fine them if guilty, adjudging the fine or punishment proportioned according to the law and the nature of the case. For instance, a husband convicting his wife of adultery, was allowed to sell her to another man, but of his own caste, and receive the price for his use.* These Headmen employed *Dásaris* as subordinate officers to minister in religious ceremonies among the inferior castes. Previous to the ceremonies commencing, the customary duty or gratuity was given to this minister of religion, and they were then at liberty to proceed with the festival, whether of marriage or any other occasion. But if the parties neglected the established presents, the *Dásaris* returned to their houses in displeasure and no other *Dásaris* would perform the office, as they would be liable to punishment for interfering. By these means the headmen collected fines, perquisites and presents from their castes, from which they paid an annual tax to the Government. This branch of custom was called *samayáchúram* and was taken credit for in the *jamabandi* accounts.

As the *Mádiga* or chuckler had a greater *áyam* or allowance than the other *Ayagar*, and that besides when he supplied ropes and leather for the use of the gardens they paid him a quantity of grain proportioned to the produce, he therefore paid *játi-múnyam*, a higher tax than the other village officers, and the Sarkar people presented him with a coarse cloth at the time of settlement yearly. In some places it was customary, if the chuckler was not able to pay the *játi-múnyam*, that the Sarkar assumed his allowances and share of the crop, and giving him one half of his perquisites, the rest was included in the government rental. He must be always ready to serve and obey the orders of the Sarkar officers; and the villagers generally employed the chuckler to shew the roads to travellers, and carry letters from their village to the next stage. Besides the *áyams* already mentioned, the chucklers in many places had *inam* or free gift lands, for which they paid some gratuity to the Sarkar.

* An instance of this kind occurred at Harihar, says the writer, when we were in that neighbourhood in 1800; a Brahman among many other fugitives from the seat of war in the Savanur country, then overrun by Dundia and the contending parties, offered his wife for sale, because the unfortunate woman had been violated; but the Brahmins of Harihar, though at first of opinion that she ought to be sold as a slave, on further consideration, and consulting with more enlightened persons, found that as her misfortune had been involuntary, it might be expiated by penance and a pecuniary mulct to the offended law.

The people who extracted salt from the soil of the Sarkar lands paid a revenue to the Government, called *uppina molla*, proportioned to the produce. The cow-keepers or Gollas paid *hullu-banni* for the liberty of feeding their flocks and cattle in the public lands. The Amildar of the district appointed one headman to collect the money arising from the duty of *hullubanni* in different places, which was thus included in the *jamabandi*. The jungles were let out for a certain rent, *kárali gutta* or *konda gutta*, to people who sold the grass and firewood to the inhabitants, according to the accounts of their kists. Those who farmed the exclusive sale of different articles from the Sarkar, purchased these articles at a low price and sold them in the market at an advanced rate; no other shopkeepers being permitted to interfere in this trade. From these articles altogether a certain revenue arose to the Sarkar, payable at the terms agreed on in the *jamabandi*. The shroff used formerly to pay a very handsome tax to the Sarkar, which was suppressed in 1801 at Chitaldroog.

The Jayaris were people convicted of murder, who were under the ancient government employed as executors to put criminals to death by order of the magistrate. For this duty they were permitted to take one gold fanam from each pariah house; their allowance is still admitted in the Chitaldroog country; they paid yearly 100 pagodas to Government as *Jayari gutta*. *Sivaya-jama*, not being certain, was the only item not included in the *jamabandi* and estimate. It is composed of the fines imposed for certain malversations or misdemeanors, and carried to account under this head.

The foregoing formed the heads of the several branches, called *Báb*, of revenue arising to the sovereign, of which the *Jamabandi* included the estimated amount, which being settled, and the revenue collected according to the kist, the occupiers used to remit the produce into the general treasury, with accounts of the disbursements made by order in the Civil and Military establishments of the Districts. The balance due by the renters were carried to the next *jamabandi*, under the head of *Silsila Báki*, which they collected from the renters with the next year's rent. The Rajas and many of the other governors, even Haidar, used to remit the charge of repairs of tanks.

For the improvement of the revenue, the following methods were generally observed.

The Government advanced money to the ryot who ploughed one *vokkala* with one plough, to enable him to provide cattle, instruments of tillage and other means to bring into cultivation next year three or four *vokkalas* of waste land. They also took pains to get broken tanks repaired, as well as the channels that conducted water to the fields; and on the high grounds where channels could not be led from the tanks, they dug many *kapile* wells.

They gave *kauls*, or a sufficient surety of protection, to the head *gaudas* of the country, who used their influence to introduce such inhabitants (from foreign countries) as might be dissatisfied with their state at home; these were placed in convenient situations until they were settled and acquainted with the management of the country, when the Sarkar gave them waste lands to cultivate at a reduced rate, till the expiration of a certain term, after which they were to pay the same rent as other ryots of the country.

The Government also encouraged the cultivation or manufacture of various articles of commerce much in demand, by supplying seeds, plants, &c., and the first expenses; sugar, indigo, opium and other articles were thus cultivated by the ryots according to instructions given on this subject.

The Government used further to make advances of money to foreign merchants and encouraged them to settle in new pettas and markets, to which they brought scarce and valuable goods from distant countries, and in return exported the product of this country to places where they could be disposed of to advantage: the customs were by this means increased, and an additional income derived by the renters of the new market places.

Some of the ancient Rajas used to trade for their own advantage in the following manner.—The cattle belonging to the Sarkar were employed in time of peace to transport the grain and other products received in the half share of the crop from the ryots, to the market towns where they were sold at the highest price, whence a more considerable price was secured, even twice or thrice more than they would get in the country, by being free of those duties that the merchants were liable to.

The establishments employed in the management of the *Gadís* were on a very moderate footing. The *Nádiga* had no pay allotted to him in many cases, as he rented generally the country, and was supposed to derive some advantage from his district; the pay of the *Parpattegar* or *Amildar* was 10 pagodas per month; *Sheristedar*, 5 pagodas; other writers from 1½ to 3 pagodas; when the Rajas employed people to collect the *sunkam* on their own account, and accounts of this department were kept, they gave a salary to the *Sunkadava* of from 2 to 5 pagodas; the regulated pay of *Atthavane* or revenue peons was from 6 to 10 *Kan-thiráya fanams*.

Little information could be obtained of any regular *Courts of Justice* or Judges specially appointed for that purpose under the ancient forms of government.* Among the eight established great offices of state or

* On this subject Sir Sumner Maine says;—Though the Brahminical written law assumes the existence of king and judge, yet at the present moment in some of the best governed semi-independent Native States, there are no institutions corresponding to our Courts of Justice. Disputes of a civil

Ashta Pradhāna, we do not find any mention of a Judge ; but there were seven Heads of Departments under Rama Raya, as follows, among whom one was apparently so designated.

Pradhāni Durga Daksha—governor of the hill forts.

Bhila Daksha—superintendent of tanks and lower forts, master of the pioneers and workmen.

Dharma Karta—lord of justice and superintendent of charities and alms.

Senādhipati—commander-in-chief of the army.

—————superintendent of the *haisals* or *vakils*, the Intelligence Department.

Pura Daksha—superintendent of towns, &c.

Devasthan Alapati—superintendent of temples and religious buildings.

But the pandits may be considered as expounders of the law or counsellors of the Rajas, who in their own persons united the office of judge and legislator. The Palegars had courts of *pañchāyati*, wherein complaints were heard and decisions given, by five respectable persons, whence the name—*pañcha*, five, and *ayati*, gathering.

The Persian ambassador previously quoted, (p. 228) has the following remarks on the administration of justice and police regulations at Vijayanagar as he saw them in 1441, in the reign of Deva Raya.

On the right hand of the palace of the Sultan there is the *divān-khāna*, or minister's office, which is extremely large, and presents the appearance of a *chihāl-sulūn*, or forty-pillared hall ; and in front of it there runs a raised gallery, higher than the stature of a man, thirty yards long and six broad, where the records are kept and the scribes are seated.† In the middle of the pillared hall, a eunuch, called a *Dandik*, sits alone upon a raised platform, and presides over the administration ; and below it the mace-bearers stand, drawn up in a row on each side. Whoever has any business to transact, advances between the lines of mace-bearers, offers some trifling present, places his face upon the ground, and standing upon his legs again, represents his grievance. Upon this, the Danaik issues orders founded upon the rules of justice prevalent in that country, and no other person has any power of remonstrance. When the Danaik leaves the chamber, several coloured umbrellas are borne before him, and trumpets are sounded, and on both sides of his way panegyrists pronounce benedictions upon him. Before he reaches the king he has to pass through seven gates, at which porters are seated, and as the Danaik arrives at each door, an umbrella

nature are adjusted by the elders of each village community, or occasionally, when they relate to land, by the functionaries charged with the collection of the prince's revenue. Such criminal jurisdiction as is found, consists in the interposition of the military power to punish breaches of the peace of more than ordinary gravity. What must be called criminal law is administered through the arm of the soldier.—*Vill. Com.* 51.

† These people, he adds, have two kinds of writing, one upon a leaf of the Hindi nut (cocoa nut) which is two yards long and two digits broad, on which they scratch with an iron style. These characters present no colour, and endure but for a little while. In the second kind they blacken a white surface, on which they write with a soft stone cut into the shape of a pen, so that the characters are white on a black surface and are durable. This kind of writing is highly esteemed.—(*Cf. Supra*, p. 407).

is left behind, so that on reaching the seventh gate the Danaik enters alone. He reports upon the affairs of the State to the king, and, after remaining some time, returns. His residence lies behind the palace of the king.

On the left hand of the palace there is the mint. Opposite the mint is the office of the Prefect of the City, to which it is said 12,000 policemen are attached; and their pay, which equals each day 12,000 fanams, is derived from the proceeds of the brothels. The splendour of those houses, the beauty of the heart-ravishers, their blandishments and ogles, are beyond all description. It is best to be brief on the matter . . . The revenues of the brothels, as stated before, go to pay the wages of the policemen. The business of these men is to acquaint themselves with all the events and accidents that happen within the seven walls and to recover everything that is lost, or that may be abstracted by theft; otherwise they are fined. Thus, certain slaves which my companion had bought took to flight, and when the circumstance was reported to the Prefect, he ordered the watchmen of that quarter where the poorest people dwelt to produce them or pay the penalty; which last they did, on ascertaining the amount. Such are the details relating to the city of Bijanagar and the condition of its sovereign.*

Carnatic Bijapur.—When from the conquests of Ran-dulha Khan, the Bijapur general, parganas had been formed, he arranged the subordinate divisions of *samats*, *tarafs*, *mauje*, *mujare* of each Pargana, and appointed Jamadars or collectors. In the time of the Ráyalas, the accountants had been called *Samprati*, but the Mahrattas introduced the different offices of Deshpánde, Deshkulkarni, Sar-Nád-Gaud, Deshmuki, and Kanungo, by whom the accounts of the country were kept; they also appointed Sheristedars to all the parganas. When jaghirs were granted to the Killedars and Mansubdars by the Sarkar, the revenue accounts of the districts for the last years were previously examined, and the new revenue rated annually on the jaghir to be granted. In fixing the revenue thus established, the inams or free gift lands, land customs, &c., were discontinued or deducted, and the net revenue, more or less than the former, ascertained by means of the Jamadars.

The Deshkulkarni was to write the *kaul patra*, the contract or lease for the revenue: the Deshpande was to sign it in Mahratti characters at the bottom of the paper; the Deshmuki, Kanunga, and Sar Nad Gaud were also to add their signatures to the written deed, and the

* SIR H. ELLIOT, *Hist. Ind.* iv, 107, 111.

Amildar finally to seal it. The particular accounts of the parganas were kept as follows : the Shanbhog was to keep the written accounts of the mauje or village, the Deshkulkarni to keep the accounts of the samats, the Deshpande the accounts of the parganas, and the Kanunga to sign the *patte* or revenue agreements. He was also to keep a written register of the revenue of the district, to be delivered to the Sarkar. It was the duty of the Deshmuki and Sar Nad Gaud to control and inspect all accounts, and report them to their superiors ; they were also to inquire and report generally on all affairs, and the settlement of the district.

Sira.—When the Moguls formed the Suba of Sira, 12 parganas were annexed to it, and the other districts were permitted to be still held by the Palegars on condition of paying an annual tribute. Officers for collecting and managing the revenues were appointed in the amáni districts only ; at the same time the offices of Deshmuki, Deshkulkarni and Sar Nad Gaud were formed into one office. Deshpándes, Majmúndárs, Kánungoyas, and Kulkarnis were maintained according to the forms long established in the dominions of Bijapur. The Deshmuk was to settle the accounts with the patels ; the Deshpánde to check the accounts of the karnams ; the Kanunga to register the official regulations, and to explain the ordinances and regulations to the inhabitants and public officers to prevent errors or mistakes. In the Majmundar's office, the accounts of the settlement were made out and issued.

The accounts of all kinds were anciently kept in Kannaḍa, but after the Mahratta chiefs attained power in the Carnatic, many Deshasts or natives of their countries followed them, who introduced their language and written character into the public accounts. Even in the samsthans of the Palegars, where the revenue and military accounts had been kept in Kannada alone, some of them beginning then to entertain large bodies of horse, employed Mahratta accountants to check the pay accounts in that language for the satisfaction of the horsemen of that nation. After the Moguls came into the country and established the Suba of Sira, the Persian language came into use.

Under the Rajas of Mysore, &c.

In the south, in the growing kingdom of Mysore, about the year 1701, Chikka Deva Raja, it is stated, distributed the business of government into 18 cutcherries or departments, probably from having learned

from his ambassadors to Aurangzib that such was the practice at the imperial court. These departments were:—

1. *Nirāpa chāvaḍi* or the secretary's department, to which he appointed one daroga or superintendent, and three daftars, registers or books of record. Everything was recorded in each of the three in exactly the same manner; all letters or orders despatched, to be previously read to the Raja.
2. *Ekka-da chāvaḍi*, whose business it was to keep the general accounts of revenue, treasury, and disbursements, civil and military; this seems to approach our office of accountant general.
3. and 4. *Ubhaika vichāra*, or two-fold inquiry. He divided his whole possessions into two portions; that north of the Kaveri he called the Paṭṇa Hobli; that south of the Kaveri was named the Mysore Hobli: to each of these cutcherries he appointed one divan and three daftars.
5. *Shime Kamlāchār*; it was the duty of this cutcherry to keep the accounts of provisions and military stores, and all expenses of the provincial troops, including those connected with the maintenance of the garrisons; one bakshi and three daftars.
6. *Bākal Kamlāchār* (bākal, a gate or portal); it was the duty of this department to keep the accounts of the troops attending at the *porte*, that is to say, the army, or disposable force.
7. *Sunkada chāvaḍi*, or duties and customs: it was their duty to keep the general accounts of customs levied within his dominions.
8. *Pom chāvaḍi*; in every taluk where the sunka was taken, there was another or second station, where a farther sum equal to half the former amount was levied; for this duty he established a separate cutcherry.
9. *Tundeya chāvaḍi*, (*tunde*, half, *i. e.*, half of the pom) this was a farther fourth of the first duty, levied in Srirangapatam only.
- 10 and 11. In the Ubhaika vichara were not included the Srirangapatna and Mysore Ashtagrama, (eight townships): for each of these he had a separate cutcherry; besides the business of revenue, they were charged with the provisions and necessaries of the garrison and palace.
12. *Benṇe chāvaḍi*, the butter department: the establishment of cows, both as a breeding stud, and to furnish milk and butter for the palace: the name was changed by Tippu to *Amrit Mahal*, and then to *Keren Barik*. (*Amrit*, the Indian nectar. *Keren Barik*, an Arabic term, may be translated almost verbally *Cornu Copia*.)
13. *Paṭṇada chāvaḍi*; this cutcherry was charged with the police of the metropolis, the repairs of the fortifications and public buildings.
14. *Behin chāvaḍi*, the department of expedition, or the post office: the business of espionage belonged also to this department.
15. *Samukha chāvaḍi*: the officers of the palace, domestics, and personal servants of every description belonged to the charge of this cutcherry.
16. *Devasthān chāvaḍi*, kept the accounts of the lands allotted to the support of religious establishments, the daily rations of food to the Brahmans, lighting the pagodas, &c.
17. *Kabbinada chāvaḍi*, iron

cutcherry ; this article was made a monopoly, and its management was committed to a separate cutcherry. 18. *Hoge soppin chávadi*, the tobacco department, another monopoly by the government, which in Seringapatam was the exclusive tobacco merchant.

It is certain that the revenues were realized with great regularity and precision, and this Raja is stated to have established a separate treasury to provide for extraordinary and unexpected disbursements, of which he himself assumed the direct custody. It was his fixed practice, after the performance of his morning ablutions, and marking his forehead with the insignia of Vishnu, to deposit two bags (thousands) of pagodas in this treasury from the cash despatched from the districts, before he proceeded to break his fast. If there were any delay in bringing the money, he also delayed his breakfast, and it was well known that this previous operation was indispensable. By a course of rigid economy and order, and by a widely extended and well organized system of securing for himself the great mass of plunder obtained by his conquests, he had accumulated a treasure from which he obtained the designation of Navakóti Náráyana, or the lord of nine crores (of pagodas), and a territory producing a revenue calculated to have been Kanthiráyá pagodas 13,23,571.

The method by which he raised the revenue is thus described. The sixth was the lawful share of the crop, for which the Raja received his equivalent in money ; and he was unwilling to risk the odium of increasing this proportion in a direct manner. He therefore had recourse to the law of the shástras, which authorized him, by no very forced construction, to attack the husbandman by a variety of vexatious taxes, which should compel him to seek relief by desiring to compound for their abolition by a voluntary increase of the landed assessment : and this is the arrangement which generally ensued ; although, from the great discontent excited by the taxes, the compromise was generally made on the condition of excepting some one or more of the most offensive, and proportionally increasing those which remained. But the Raja, with that profound knowledge of human nature which distinguished all his measures, exempted from these new imposts all the lands which were allotted to the provincial soldiery in lieu of pay, according to the ordinary practice of the smaller Hindu States, and thus neutralised, in some degree, the opposition to the measure, and ensured the means of eventual compulsion. Subjoined is the detail of these

taxes.* The whole system is stated to have been at once unfolded, with intimation that it would be gradually introduced according to circumstances ; but the commotions which it produced, by leading to measures of extreme severity, precipitated its total and abrupt introduction.

One of the earliest measures of this Raja's reign had been to compel the dependent Wodeyars and Pálegars, who, like his own ancestors, had commenced the career of ambition by affecting in their respective districts to be addressed by the title of Raja, publicly to renounce that assumption of independence, to disclaim the local prerogatives of punishment and confiscation without previous authority from the Raja, and to revert to their original character of obedient officers of the government. This object was aided by first inviting, and then compelling, them to fix their residence at Seringapatam ; by assigning to them offices of honour about the Raja's person, and gradually converting them from rebellious chieftains to obsequious courtiers. The insurgents in the districts were left, in consequence, destitute of the direction of their accustomed leaders, and the Jangam priests, deprived of their local importance, and much of their pecuniary receipts, by the removal of these mock courts from the provinces, were foremost in expressing their detestation of this new and unheard-of measure of finance, and in

* *Mane terige*, or house tax. 2. *Hul hana*, a tax upon the straw produced on the ground which already paid *kandáya*, or the land tax, on the pretence that a share of the straw, as well as of the grain, belonged to government. 3. *Deva Ray utta*—utta is literally loss, the difference of exchange on a defective coin. Deva Raj, on the pretence of receiving many such defective coins, exacted this tax as a reimbursement; this was now permanently added to the ryots' payments. It was different according to the coins in use in the several districts, and averaged about two per cent. 4. *Bergi*—a *patel* (for example) farmed his village, or engaged for the payment of a fixed sum to the government ; his actual receipts from the ryots fell short of the amount, and he induced them to make it up by a proportional contribution. The name of such a contribution is *bergi*, and the largest that had ever been so collected was now added, under the same name, to the *kandáya* of each ryot. 5. *Yeru sunka*—*sunka* is properly a duty of transit on goods or grain; *yeru*, a plough. The ryot, instead of carrying his grain to where a transit duty is payable, sells it in his own village. The *yeru sunka* was a tax of one to two gold fanams on each plough, as an equivalent for the tax which would have been paid if the grain had been exported. 6. *Jati nánja*, a tax upon the heads of those castes (*Jogi, Jangam, &c.*) who do not come within the general scope of Hindu establishments, and form separate communities which occasionally oppose the Brahminical rule. On every occasion of marriage, birth, or law suit, or quarrel, a certain fine was levied on each house concerned as parties or judges, and a chief of each caste was made responsible for the collection. 7. *Magga kandáya* or loom tax. 8. *Kúrike terige*, a tax on fornication. 9. *Málive terige*, a tax upon marriage. 10. *Anga-ti pattadi*, or shop tax. 11. *Anga-di passera*, a tax upon the moveable booths which are set up daily in the middle of the bazaar streets. 12. *Kávadi terige* (*kávadi* is the name of a bullock saddle) a tax upon bullocks kept for hire. 13. *Míríke* (solling), a tax upon the purchase and sale of cattle. 14. *Uppin mála*, a tax upon the manufacture of the inland salt, produced by lixiviating saline earths. 15. *Ubbe kanike*—*ubbe* is the kettle or vessel made use of by washermen to boil and bleach their cloths; this was a tax on each kettle. 16. *Kuri terige*, a tax of a certain sum per cent on flocks of sheep. 17. *Páshucara* (Pasha is a fisherman, a net). This is a tax not on each net, but on the privilege of fishing with nets in certain lakes. 18. *Gula gíval*, a tax upon wool for building, or fuel brought in from the forests. 19. *Gularina pommu*. (*Gula* is the name of a plough-share). This is a separate tax on that instrument, exclusively of the plough tax, No. 5, which is professed to be a tax on the alienation of grain. 20. *Terad bagalu* (opening a door). In a country and a state of society where window-glass was unknown, this was a most ingenious substitute for the window tax. The husbandman paid it, as expressed by the name, for the permission to open his door. It was, however, levied only on those made of planks, and not on the common bamboo door of the poorer villagers.

exhorting their disciples to resistance. The terrible mode in which this was put down has been described p. 245. The new system of revenue was finally established, and there is a tradition that the Raja exacted from every village a written renunciation, ostensibly voluntary, of private property in the land, and an acknowledgment that it was the right of the State.

Bednur.—In the Bednur territory, the west of the country, the most distinguished ruler was Sivappa Nayak, who reigned 1648 to 1670. His *shist* or land assessment, and *prahar patti* or rules for collecting the *hâlat* on areca nut, &c. are frequently referred to in proof of his financial skill, and he is said to have framed a scale of expenditure, including every contingency for each day in the year, for the Sringeri mâttha.

During 12 successive years, he caused one field of each description of land, in every village, to be cultivated on his own account, and an accurate record kept of the seed sown, the expense of culture, and the quantity and value of the produce. He then struck averages of the produce and prices, and taking the value of one *khandaga* (of 50 seers) at 1 fanam, and the Sarkar share as one third of the gross produce, fixed the rates shewn in the following table, land being distributed into 5 classes, with two rates for each class.

Shist on land requiring one *kandaga* of seed. Wet land

Class of land.	Description.	Produce.						Rate.					
		Highest.			Lowest.			Highest.			Lowest.		
		Quantity.	Value.		Quantity.	Value.		Quantity.	Value.		Quantity.	Value.	
1st, Uttamam.	Yeremisra,—black, and black mixed with sand ...	Khandis. 30	P. 3	F. 0	A. 0	Khandis. 26½	P. 2	F. 6	A. 4	P. 1	F. 0	A. 8	12
2nd, Madhyamam.	Bettabis,—high and open red or mixed...	22½	2	2	8	18½	1	8	12	...	7	8	6 4
3rd, Kanish-tam.	Varavindu,—dark or light sand with springs ...	15	1	5	0	11½	..	...	5	0	...	3	12
4th, Adhamam	Yatte,—hard, high without moisture	7½	...	7	8	3½	...	...	2	8	...	1	4
5th, Adhamâ-dhamam.	Urimalal,—hot sand, dry and above level of water ...	3	...	3	0	17½	...	...	1	0	...	10	

Dry land, or *hakkal*, in the Gaddenad, was included in the *gadde shist*. In the open country the following rates were fixed per *khandaga*.

Class.	Description.	P.	F.	A.
1st	Yere,—black clay	2	2	8
2nd	Kari Mesab,—dark loam with sand	2	0	0
3rd	Kemman,—red	1	7	8
4th	Malal,—sandy	1	5	0
5th	Imman,—mixed	1	0	0
6th	Gonikal,—gravelly	0	7	8

Gardens were measured with a rod, the length of the stone steps at the Ikkeri Aghoresvara devasthan (18 feet 6 inches English, exactly). This rod was the space called *dāya* allowed for one tree. The shist was fixed on 1,000 such *dāya* at various rates. These are not given, but they appear to have varied from 7 to 25 Bahaduri pagodas.

The shist continued for 39 years from 1660. The following additions were afterwards made. In 1700, one anna in the pagoda, called *dasola*, by Chinnammāji, for the support of an establishment for providing food gratis to all who applied. In 1736, one fanam 4 as. per pagoda, called *paguli*, by Chikka Somasekhara, when the Moguls threatened an invasion. In 1753, one fanam 4 as. per pagoda, called *patti*, by Basappa Nayak, to pay the Mahratta chout.

Under the Basvapatna chiefs, Bedar offered higher rents for some villages than were paid by the old gaudas, who were Kurubar, which were accepted, which ended in the ryots at length agreeing to pay an addition to the kulavana of from 2 to 6 fanams in the pagoda. This was the origin of *birada*, which is found in the east of the Shimoga District.

Haidar Ali.—Such was the system before Haidar Ali Khan; when he had subjugated the ancient Palegars, he again reinstated several of them on condition of paying an annual tribute; and he followed generally the regulations formerly established, and the peculiar customs and laws of the different provinces. But he was at all times accessible to complaints, and never failed to pursue to its source the history of an irregular demand, and to recover it with additional fines from the exactor. It is true that the amount was never returned to the complainant, but it frequently produced the dismissal of the offender; the certainty of investigation tended to restrain oppression, and, as Haidar was accustomed to say, rapacity in this case was nearly as good for his subjects, and much better for himself, than a more scrupulous distribution of justice. For though he left the fiscal institu-

tions of Chikka Deva Raja as he found them, he added to the established revenue whatever had been secretly levied by a skilful or popular Amil and afterwards detected : this produced a progressive and regular increase, and the result of complaints gave occasional, but also tolerably regular, augmentations.

Tippu Sultan.—But Tippu Sultan not approving of the old regulations, introduced a new system through all his dominions. He divided the whole into *tukadis* of five thousand pagodas each, and established the following officers in each *tukadi* :—1 Amildar, 1 sheristedar, 3 gumastas, 1 tarafdardar to each taraf, 6 attavane peons, 1 golla (or headman) to seal and keep money, 1 shroff and 1 munshi. To 20 or 30 *tukadis* was attached an Asuf cutcherry : the official establishment of each of them was ; 1st and 2nd Asufs, 2 sherista, 2 gumastas with 5 men each, 40 peons, one shroff, one munshi, one mashalchi to attend the office, one Persian sheristedar, and some gumastas to keep the accounts in Persian. In this manner an entire new system of management was introduced. Mir Sadak, the president of the Asuf cutcherry, circulated such new orders as were necessary, under the signature and seal of the Sultan, to the Head Asufs of the Revenue Department, which they communicated to Amildars under them, and these sent them to the Tarafdars with directions to have them notified throughout their districts.

The accounts of revenues were made out in the Kannada character by the tarafdars ; fair copies of which they communicated to the Amildars, in whose office they were translated into Mahratti, and a copy of each preserved by the sheristedars in the Kannada and Mahratti languages. A third set was kept in Persian.

The following salaries were attached to offices. In the *Tukadi* Office the Amildar got 10 pagodas ; sheristedar, 5 ; gumasta, 2 ; munshi, 2 ; golla, 8 fanams ; shroff, 8 ; attavane peons, 6 ; naiks, 8. The *sun-kadars* had no pay, being renters in several districts. In the Asuf Cutcherry, Asufs from 50 to 60 pagodas each ; sheristedars, from 25 to 30 ; gumastas, Persian 8, Kannada 6, Hindavi 7 ; munshi, 8 ; golla, 2 ; shroff, 2 ; kazi, 5 ; his duty was to administer justice to the Musalmans, and all of that religion who neglected to come to perform the *namáz* in the mosque on Friday were liable to be fined or punished by the kazi.

From Wilks the following further details are extracted, regarding what Tippu Sultan in his memoirs styles his 'incomparable inventions and regulations,' some reference to which has been made in p. 287—9.

"The code of *military regulations* contained elementary instructions for the infantry, which were as well given as could be expected from a person copying European systems, and unacquainted with the elements of mathematical science ; the invention of new words of command would have been a rational improvement, if the instructions had thereby been rendered more intelligible ; but the substitution of obsolete Persian for French or English gave no facility in the instruction of officers and soldiers, who, speaking of them in mass, may be described as utterly ignorant of the Persian language. The general tendency of the changes, effected in the whole of his military establishment, was to increase and improve his infantry and artillery at the expense of the cavalry.

The *fleet* was originally placed by Tippu under the Board of Trade. The experience of two wars had shewn that it would always be at the mercy of a European enemy ; and it seemed to have been chiefly considered as a protection to trade against the system of general piracy then practised along the western shores of India, up to the Persian gulf. The loss of a moiety of every resource in 1792, gave a new scope and stimulus to invention ; and the absurdity was not perceived of seeking to create a warlike fleet without a commercial navy, or of hoping, literally without means, suddenly to rival England in that department of war which was represented to be the main source of her power by the vakils who accompanied the hostages, and had been specially instructed to study the English institutions. This novel source of hope was not finally organized on paper till 1796, and can scarcely be deemed to have had a practical existence. He began in 1793 with ordering the construction of a hundred ships ; but in 1796 he sunk to twenty ships of the line and twenty frigates ; eleven Commissioners, or Lords of the Admiralty, (*Mir-e-Yem*) who were not expected to embark ; thirty *Mir Bahr*, or Admirals, of whom twenty were to be afloat, and ten *at court* for instruction—a school for seamanship which it is presumed a British Admiral would not entirely approve. A 72-gun ship had thirty 24-pounders, thirty 18-pounders, and 12-nines ; a 46-gun frigate had twenty 12-pounders, as many nines, and six 4-pounders ; the line-of-battle ships were 72's and 62's ; and the men for the forty ships are stated at 10,520. To each ship were appointed four principal

officers: the first commanded the ship; the second had charge of the guns, gunners, and ammunition; the third, of the marines and small arms; the fourth, the working and navigation of the ship, the provisions and stores; and the regulations descend to the most minute particulars, from the dock-yard to the running rigging; from the scantlings of the timbers to the dinner of the crew.

The *commercial regulations* were founded on the basis of making the sovereign, if not the sole, the chief, merchant of his dominions; but they underwent the most extraordinary revolutions. On his accession he seems to have considered all commerce with Europeans, and particularly with the English, as pregnant with danger in every direction. Exports were prohibited or discouraged; 1st, because they augmented to his own subjects the price of the article; 2nd, because they would afford to his neighbours the means of secret intelligence; and 3rd, because they would lift the veil of mystery which obscured the dimensions of his power. Imports were prohibited, because they would lessen the quantity of money, and thereby impoverish the country; propositions which may indicate the extent of his attainments in political economy: and such was the mean adulation by which he was surrounded, that domestic manufactures of every kind were stated to be in consequence rapidly surpassing the foreign, and a turban of Burhampoor would be exhibited and admired by the unanimous attestation of all around him as the manufacture of Shahar Ganjam. It was under the influence of this utter darkness in commercial and political economy, that in 1784 he ordered the eradication of all the pepper vines of the maritime districts, and merely reserved those of inland growth to trade with the true believers from Arabia. The increase of this article of commerce became, some years afterwards, an object of particular solicitude, but it is uncertain whether the prohibition of growing red pepper or chilli, was to be considered as a commercial regulation, to increase the growth of black pepper, or as a medical regimen, or as a compound of both motives. It is a general opinion in the south of India, that the free use of red pepper has a tendency to generate cutaneous eruptions, and the Sultan certainly prevented its entering his harem for six months; whether in that period he did not find the ladies improved in the smoothness of their skin, or was influenced by other causes; he withdrew the prohibition of culture about a year after it had been promulgated.

From the personal reports of the vakils who accompanied the hostages to Madras, his attention was called to a proposition, however strange yet stated to be generally admitted among the most enlightened persons at Madras, that the power not only of the English Company but of the English King, was founded in a material degree on commercial prosperity ; and the Sultan devised an extensive plan for a similar increase of power ; still, however, pursuing the principles which he conceived to be sanctioned by the example of the India Company, or combining the characters of merchant and sovereign. In a long and laborious code of eight sections, he established a royal Board of nine Commissioners of Trade, with seventeen foreign and thirty home factories in the several districts ; furnished with extensive instructions for a profitable system of exports and imports, by land and by sea, and a strict theoretical control over the receipts and disbursements ; the monopolies, however, continued to be numerous, and those of tobacco, sandalwood, pepper and the precious metals were the most lucrative.

One, however, of the sections of commercial regulation is so perfectly unique that it may afford entertainment. It professes to be framed for the attractive purpose of 'regulating commercial deposits, or admitting the people at large to a participation in the benefits to accrue from the trade of the country.' Every individual depositing a sum not exceeding five hundred rupees was declared entitled at the end of the year to receive, with his principal, an increase of 50 per cent. For a deposit of from five hundred to five thousand, 25 per cent. Above five thousand 12 per cent., with liberty at all times and in all classes, to receive, on demand, any part of the deposit together with the proportion of interest* up to the day. These variations of profit, in the inverse ratio of the deposit, were probably intended to shew his consideration for the small capitalist, but a project for enticing his subjects into a swindling loan was too glaring to be misunderstood. At a very early period of his government, he had, in an ebullition of anger, extinguished the business of banker, and monopolized its dependent and most profitable trade of money-changer. He now issued an ordinance, converting the trade of money-changer and broker into a monopoly for the benefit of Government, furnishing coin for the purpose, from the treasury, to servants paid by regular salaries. It was, however, reported that the dealers kept

* The word *interest* is not employed, usury being at variance with the precepts of the Koran ; *profit* is the term used.

aloof from transactions with the government shops, that the expenses far exceeded the profits, and that it was necessary either to abandon the plan, or to enlarge it so as to embrace not only regular banking establishments but commercial speculations necessary to their prosperity. A part of this plan was therefore gradually introduced, and the funds in the hands of the money-changers were employed in advantageous loans.

The *regulations of revenue*, professing like those for pecuniary deposits to be founded on a tender regard for the benefit of the people, contained little that was new, except that the nomenclature and the institutions of Chikka Deva Raja and Haidar were promulgated as the admirable inventions of Tippu Sultan. One improvement occurs, not undeserving the modified consideration of western statesmen who value the health or the morals of the people. He began at an early period to restrict the numbers and regulate the conduct of the shops for the sale of spirituous liquors, and he finally and effectually abolished the whole, together with the sale of all intoxicating substances, and the destruction, as far as he could effect it, of the white poppy and the hemp plant, even in private gardens. For the large sacrifice of revenue involved in this prohibition, the extinction of Hindu worship and the confiscated funds of the temples were intended to compensate, and would, if well administered, in a degree have balanced the tax on intoxicating substances: the measure commenced at an early period of his reign, and the extinction was gradual, but in 1799 the two temples within the fort of Seringapatam alone remained open throughout the extent of his dominions.

Of his system of *police*, the following extract from his official instructions may suffice. 'You must place spies throughout the whole fort and town, in the bazars, and over the houses of the principal officers, and thus gain intelligence of every person who goes to the dwelling of another, and of what people say, &c. &c.' All this Haidar effectually did, and all this Tippu Sultan only attempted. No human being was ever worse served or more easily deceived."

The Regency of Purnaiya, 1799—1810.

Of the system of administration as established under the Divan Purnaiya, an account is given in a report from the same pen, under date 1804, from which the subjoined particulars are derived.

Tippu Sultan attempted the subjugation of the whole of the Palegars, and the annexation of their lands to those of the Sarkar ; but under the complicated system of fraud and malversation of every kind which prevailed, a large proportion of the palyams which continued to be represented at the Presence as under Sarkar management, were, by a mutual collusion of the Palegar and Amil, held by the former ; and the degree of authority which should be exercised by the latter, came at length to depend on the sufferance of the Palegar, who had often but slender claims to that title. On the establishment of the present government, there were, accordingly, few districts that did not furnish at least one claimant, possessing or pretending to the hereditary jurisdiction. The mischief was not confined to the revival of former pretensions ; in some cases the patels, and in others the officers of police, emulating the Palegar character, and copying their history, sought to obtain the independent rule of their respective villages and the privilege of encroaching on their neighbours ; and the ryots who could afford a bribe were generally successful in procuring a false entry in the books of the district, of the quantity of land for which they paid a rent. In some districts attempts were made by the newly appointed Asufs or Amils to reform these latter abuses ; but the frequent, and latterly the systematic, assassination of such reformers terrified their successors ; and these feeble and ineffectual efforts served only to confirm the most base and abject reciprocation of licentiousness and corruption.

With a view to compose and encourage the well affected, and to obviate unnecessary alarm in those of an opposite character, the new Administration commenced its proceedings by proclaiming an unqualified remission of all balances of revenue, and the restoration of the ancient Hindu rate of assessment, on the lands, and in the sáyar.

For the maintenance of public authority, a small but select body of cavalry, infantry and peons was collected from the ruins of the Sultan's army ; and for the preservation of interior tranquillity, a plan was adopted which deserves to be more particularly described. The ancient military force of the country consisted of peons or irregular foot, variously armed, but principally with matchlocks and pikes ; these men, trained from their infancy according to their measure of discipline to military exercises, were most of them also cultivators of the soil, but the vacant part of the year had usually been allotted to military enter-

prize, and when the circumstances of their respective chiefs offered nothing more important, these restless habits led them to private depredation. It was necessary that men of these propensities should either be constantly restrained by the presence of a large military force, or be made by proper employment to feel an interest in the stability of the government; and there was no hesitation with regard to this alternative if the latter should be found to be practicable. Haidar Ali had employed large bodies of these men in his garrisons and armies. Tippu Sultan had diminished their numbers for an increase of his regular infantry; but neither of those chieftains steadily pursued any systematic plan on this important subject.

The system adopted by the Divan was, to engage in the service of the State at least one individual from each family of the military; to respect the ancient usages of their several districts with regard to the terms on which peons were bound to military service; in all practical cases to assign waste lands in lieu of one half of their pay, according to the prevailing usage of ancient times. Their local duties were defined to consist, in taking their easy tour of guard in the little forts or walled villages to which they were attached; and in being ready at all times to obey the calls of the officers of police.

Their village pay, half in land and half in money, varied from 2 to 3 Rs. per month, with a batta of $3\frac{1}{2}$ if called out from their respective districts; when frequent reliefs, according to their domestic convenience, were always allowed. One thousand of them were prevailed on to enrol themselves for occasional service as dooly bearers, and 450 of that number served with the Company's army; and 817 of the number perform the duty of runners to the post office of the Government of Mysore.

The number of peons thus enrolled, exclusively of those in constant pay, amounted during the two first years to 20,027 persons; and their annual pay to 225,862 Kanthiraya pagodas. Better information and improved arrangements enabled the Divan in the third year to reduce the number to 17,726; and the expense to 184,718 Kanthiraya pagodas. In the fourth and fifth years, they were reduced to 15,247 persons, and the expense to 148,478 Kanthiraya pagodas; and this amount was considered by the Divan to be nearly as low as it could with prudence be reduced.

The lineal descendants and families of several of the most powerful Palegars were destroyed in the general massacre of prisoners which was ordered by Tippu Sultan subsequently to the defeat of his army

by Lord Cornwallis on the 15th May 1792. A few persons who preferred the chance of future commotions to a suitable and respectable provision, retired from the country ; a still smaller number, of refractory conduct, were imprisoned : but the greater proportion accepted gratuitous pensions, civil offices, or military command, on the condition of residing at Mysore, or accompanying the Divan when absent from that place. The expedient of assassinating an Amil was resorted to at an early period ; but the police had even then assumed so efficient a form that all the murderers were traced and executed : and this savage experiment was not renewed.

The revolutions which had occurred at an earlier or more recent period in every district of Mysore, do not seem to have altered the tenures on which the lands were held by the actual cultivators of the soil. With the exception of Bednur and Balam, the general tenure of land may be described to be ' the hereditary right of cultivation,' or the right of a tenant and his heirs to occupy a certain ground so long as they continue to pay the customary rent of the district ; but as in the actual condition of the people the rent can only be paid while the land is cultivated, it is apparently held that the right no longer exists than while it is thus exercised : and when the tenant ceases to cultivate, the right reverts to the Government, which is free to confer it on another.

In the provinces of Bednur and Balam, the property of the soil is vested in the landholder ; and the hereditary right of succession to that property is held in as great respect as in any part of Europe. The rents being paid in money, and the officers of Government having no further interference with the ryots than to receive those rents, the tenure of land in those provinces is highly respectable. This venerable institution of hereditary property and fixed rents is attributed to Sivappa Nayak, and the rent established by him is said to have continued without augmentation until the conquest by Haidar Ali ; there is reason, however, to believe that under the form of contributions to defray the expense of marriages and aids on extraordinary occasions, the rent actually paid was considerably enhanced. Military service was at all time a condition of the tenure.

On the conquest of Bednur by Haidar Ali in the year 1763, he at first attempted to conciliate the principal landholders ; but having discovered a conspiracy to assassinate him, supported by the landholders and headed by the chief officers of the late government and some of his

own confidential servants, he proceeded, after the execution of not less than 300 persons, to disarm landholders, and to commute their military service for a money payment; holding the country in subjection by means of an establishment of 25,000 foreign peons. This assessment of the lands continued without alteration until the peace of 1792, which deprived Tippu Sultan of one half of his territories, and suggested to him the singular expedient of compensating that loss by a proportional assessment on his remaining possessions. This measure, in Bednur as well as elsewhere, produced an effect exactly the converse of what was intended; and, added to other abundant causes, terminated in the absolute ruin of his finances.

On the establishment of the new government of Mysore, the landholders of Bednur attempted to stipulate for the restoration of the ancient rates of land tax of Sivappa Nayak, and the remission of the pecuniary commutation of military service established by Haidar Ali. It was ascertained in Bednur, and it is believed also in Canara, that the commutation fixed by Haidar was fair and moderate: the rates of 1764 were accordingly adopted as the fixed land tax, and continue apparently to give satisfaction.

The province of Balam was never effectually conquered until military roads were opened through the forest towns by the Honourable Major General Wellesley in the year 1801—2. The authority of Haidar Ali, or of Tippu Sultan, over this province, was extremely precarious; and the presence of an army was always necessary to enforce the payment of the revenue. The rates of the land tax had accordingly fluctuated; but were fixed by the new government at a standard which appeared to be acceptable to the landholders.

The Divan appeared to have an adequate conception of the advantages, both to the ryots and the government, of a system of hereditary landed property and fixed rents, over the more precarious tenures which prevailed in other parts of Mysore. And throughout the country he generally confirmed the property of the soil to the possessors of plantations of areca, cocoa nut, and other plants which were not annual. The exceptions to this latter measure principally applied to gardens and plantations which had gone to decay under the late government from over assessment; and to those which had recently been formed and did not yet admit of the adjustment of a fixed rent. He shewed a general disposition to accede to the proposals of individuals for fixing the rents and

securing the property on every description of land ; but he did not press it as a measure of government, which the ryots habitually receive with suspicion ; and held the opinion that people must be made gradually to understand and wish for such a measure before it could be conferred and received as a benefit.

The whole of the revenue is under amáni management. The cultivators of dry lands pay a fixed money rent, calculated to be equal to about one-third of the crop ; and those of the wet or rice lands, a payment, nominally in kind, of about one-half of the crop ; but generally discharged in money at the average rates of the district, which are adjusted as soon as the state of the crop admits of an estimate being made of its value. When the Amil and ryots cannot agree on the money payment, it is received in kind. The precarious nature of the rice cultivation in the central and eastern parts of Mysore makes it difficult to remedy this very inconvenient practice ; and it has hitherto been found impracticable to adjust any money rents for wet cultivation in those parts of the country. In the western range some farmers have made the experiment of a money rent for rice ground, but the wáram or payment in kind is generally found so much more profitable, by the facility it affords of defrauding the government, that the adjustment of money rents for that description of land is not making much progress.

The civil government is divided into three departments ; 1st, Treasury and Finance ; 2nd, Revenue ; 3rd, Miscellaneous, not included in the two former. The conduct of the military establishment is entrusted to two distinct departments, of Cavalry and Infantry. The Kandachár, or establishment of peons already described, is under the direction of a sixth separate department, partaking both of civil and military functions, in its relation to the police, the post office, and the army. The Divan may be considered personally to preside over every department.

The operations of the financial department are extremely simple. Each district has its chief golla, who keeps the key of the treasury ; the sheristedar has the account, the Amil affixes his seal ; and the treasury cannot be opened except in the presence of these three persons. The saráf examines the coins received on account of the revenue, affixes his seal to the bags of treasure dispatched to the general treasury, and is responsible for all deficiencies in the quality of the coin. A similar process, sanctioned by the sealed order of the Divan, attends the disbursement of cash at the general treasury ; and the accounts

are kept in the same style of real accuracy, and apparent confusion, which is usual in other parts of India.

The miscellaneous department, together with several indefinite duties, comprises two principal heads, viz., first, the regulation of the Raja's establishment of state, and of his household ; and secondly, the custody of the judicial records.

In the administration of justice, as in every other branch of the government, due regard has been given to the ancient institutions of the country, and to the doctrines of the Hindu law. There is no separate department for the administration of justice in Mysore, with the exception of *kházis* in the principal towns, whose duties are limited to the adjustment of ecclesiastical matters among the Muhammadan inhabitants. Matters of the same nature among the Hindus are usually determined according to *mámúl* or ancient precedent, and where there is no *mámúl*, by the doctrine of the *shástras*, if any can be found to apply.

The Amil of each taluk superintends the department of police, and determines in the minor cases of complaint for personal wrongs ; the establishment of *Kandáchár* peons gives great efficiency to this department. Three Subadars, for the purposes of general superintendence, have been established over the respective provinces of Bangalore, Chitaldroog and Bednur ; and these officers direct the proceedings in all important cases, criminal or civil. On the apprehension of any persons criminally accused, the Subadar or the Amil, if he sees cause for public trial, orders a *pancháyat*, or commission of five, to be assembled in open cutcherry ; to which all inhabitants of respectability and unconnected with the party, have the right of becoming assessors. The proceedings of this commission, in which are always included the defence of the prisoner, and the testimony of such persons as he chooses to summon, are forwarded to the Divan, accompanied by the special report of the Subadar or Amil. In cases of no doubt, and little importance, the Divan makes his decision on the inspection of these proceedings. In matters of difficulty, or affecting the life or liberty of the prisoner, the case is brought for final hearing before the Divan, who pronounces his sentence, assisted by the judgment of the Resident.

The administration of civil justice is conducted in a manner analogous to that of the criminal. The proclamation which announced a remission of all balances of revenue, among other benefits which it confer-

red on the people of Mysore, shut up the most productive source of litigation. The Amil has the power of hearing and determining, in open cutcherry, and not otherwise, all cases of disputed property not exceeding the value of five pagodas. Causes to a larger amount are heard and determined by a pancháyat composed as above described : and as publicity is considered to afford an important security against irregular or partial proceedings, the respectable inhabitants are encouraged to attend as assessors, according to their leisure and convenience. In cases where both the parties are Hindus, the panchayat is usually composed of Hindus ; where the parties are of different sects, the panchayat is formed of two persons from the sect of each party, and a fifth from the sect of the defendant. In plain cases, where no difference of opinion has occurred in the panchayat, the Amil confirms their award, and forwards their proceedings to the Presence. In cases of difficulty, or variety of opinion, the proceedings are forwarded with the report of the Subadar or Amil, to the Divan, who pronounces a final decision in communication with the Resident ; or, if he sees cause, orders a re-hearing before himself. In all cases whatever, the parties have the right of appeal to the Divan ; and his frequent tours through the country facilitate the practice of this right.

The form of proceeding in civil cases, differs materially from the practice of English courts.

Before the trial commences, the plaintiff first, and then the defendant are each required to give a circumstantial narrative of the transaction which involves the matter at issue ; this narrative is carefully committed to writing, and twice read over to the party, who corrects what has not been properly stated ; the document is then authenticated by the signature of the party, of two witnesses, and of a public officer. The correct agreement of this narrative with facts subsequently established, is considered to constitute strong circumstantial evidence in favour of the party, and its disagreement with any material fact, to amount to the presumption of a fictitious claim or false evidence. The Hindu law seems indirectly to enjoin this branch of the proceeding. Testimony is received according to the religion of the witness, first for the plaintiff, and then for the defendant ; and the members of the panchayat, or assessors, and the witnesses called for the purpose, depose to matters of general notoriety. The panchayat, in cases of difficulty, usually prefix to their award a few distinct propositions, explaining the grounds of their decision, which generally seem to be drawn with considerable sagacity. But the object

in which the principles of proceeding differ most essentially from those of an English court, is in the degree of credit which is given to the testimony upon oath. It appears to be in the spirit of English jurisprudence to receive as true the testimony of a competent witness until his credibility is impeached. It is a fixed rule of evidence in Mysore, to suspect as false the testimony of every witness until its truth is otherwise supported. It follows as a consequence of this principle, that the panchayats are anxious for the examination of collateral facts, of matters of general notoriety, and of all that enters into circumstantial evidence ; and that their decisions are infinitely more influenced by that description of proof than is consistent with the received rules of evidence to which we are accustomed, or could be tolerated in the practice of an English court.

The administration of the revenue is committed, under the control of three principal Subadars, to Amils presiding over taluqs, sufficiently limited in extent to admit a diligent personal inspection of the whole of their charge ; the number of these taluqs has varied as convenience seemed to require, from 116 to 120.

The Divan enters in a separate account ancient allotments of land to the local institutions of the hamlets and villages, (involving a detail of 41,739 objects and persons, and an annual expense of 89,489 pagodas) and excludes the amount in the first instance from the account of the gross revenue, as it can never become an available source of supply.

The four distinct heads of revenue are,—Land tax, Sáyar, Toddy and spirituous liquors, and Tobacco.

The head of land tax comprises, besides the objects which it describes, the house tax and the plough tax, being an impost, varying in different districts according to ancient practice, of about the average rate of one Kanthiraya fanam annually on each house and plough. The province of Bednur, and the districts of Balam and Tayur, with all plantations of trees not annual, pay a fixed money rent. The whole of the dry ground of Mysore pays also a fixed money rent, with the distinction, however, regarding the tenures of the lands, which has been noticed. The rent to be paid for dry land accordingly does not depend on the quantity cultivated, and the Amil no further concerns himself with that object than to observe whether the ryot sufficiently exerts his industry to be able to pay the rent. All Amils are authorized to make takávi advances when necessary. The superior certainty of a dry compared to a wet crop, is limited to wet ground under reservoirs ; and the uncertainty of the quantity of water which may be collected, and of course

of the extent of land which can be watered, is among the principal reasons which have hitherto prevented the adjustment of a money rent for such lands ; and have continued the ancient practice of the wáram, or the payment to the government of a moiety of the actual crop. The wet cultivation which depends on the embankments of the Kaveri and other rivers which have their source in the western hills, is of a different description, and is usually considered the most certain of all the crops ; for such lands the payment of a money rent has been introduced, and is gradually gaining ground. In some few cases such lands are held under an ancient fixed rent, much lower than the present rates.

The original proclamation which pledged the Divan to the ancient Hindu assessment, both of the land and of the sáyar, has in both instances been attended with its appropriate advantage, and inconvenience. Each district having at remote periods been governed by distinct authorities, each has its peculiar rates of sáyar, founded on no principle of general application. On areca nut, for instance, it has been the ancient custom to levy a duty in money not *ad valorem* ; but as the areca nut of different districts differs materially in quality and price, the duty, if it were uniform, would afford no means of computing the correct value of the export ; and it is certain that the increase and decrease in the duty is by no means in the rates of the value, but has been fixed in each district on arbitrary considerations which cannot now be traced. The sáyar in some districts has been farmed ; and in others it has been held in amáni, a difference which still further increases the intricacy of the subject.

The revenue from toddy and spirituous liquors is generally farmed.

The fourth head of revenue, tobacco, is also generally farmed, with proper restrictions regarding the selling price. Betel leaf produces a revenue in one town only of Mysore, namely Chitaldroog, where the tax existed previously to the annexation of that district to Mysore ; the produce of this tax is included with that of tobacco.

Under the expenses of management, the first head is that of Jaghirs and Inams for religious purposes. The detail delivered by Purnaiya to the Mysore Commissioners, as allowed by Haidar Ali Khan, amounts to—

				Kanthiraya Pagodas.
Devasthans and Agrahars	...	...	...	1,93,959
Maths of Brahmans...	...	...	...	20,000
Muhammadan establishments as allowed by Tippu Sultan	...	...	...	20,000
Total.....				2,33,959

The particular attention of the Resident was directed to the diminution and check of these expenses, and chiefly to guard against the alienation of land to Brahmans, an abuse which was considered to be not improbable under a Hindu government administered by Brahmans. The Divan in the first instance assumed the possession of the lands of all descriptions, principally with the view of revising the grants and alienations of every kind, and this operation enabled him to make many commutations of land for money payment, with the consent of the parties.

The second head in the expenses of management is the repairs of tanks. The ruin and neglect into which every public work of this kind had fallen during the administration of Haidar Ali and Tippu Sultan, caused the expenses in the two first years to be large.

The whole of the disbursements charged under the general head 'expenses of management,' amounted in the fourth year, (including the expense of rebuilding the forts of Bangalore and Channapatna, which certainly does not belong to such a head,) to 510,000, which is $20\frac{1}{3}$ per cent on the gross revenue; but inams and jaghirs, (under whatever head it may be customary to charge them) are not correctly an expense of 'managing the revenue;' and the explanations which have been already given, shew that a very moderate portion of the Kandachar ought to be considered as a revenue charge. If one-third should be considered as the fair proportion, the expenses of management would then be reduced to 342,736, and its relation to the gross revenues of the same year would be $13\frac{1}{4}$ per cent. In the fifth year, these expenses amounted (exclusively of the repair of forts) to 486,011, or 24,000 less than in the fourth year.

These considerations belong principally to the question of the actual expense of collecting the revenue, and the technical mode of reckoning its net produce. If the sums discussed are not brought to account in that manner, they will come to be inserted as a charge in the general expenses of the government; and as the principal part of the income of the Divan is derived from his commission on the net revenue, it is creditable to his moderation to observe that the account of the net revenue is framed in a mode which is unfavourable to the amount of his income.

It may be convenient in this place to state, that according to this mode of reckoning, the net revenue, by deducting from the gross amount the whole of the charges above discussed, amounted in the

first year to pagodas 15,99,872, second year 17,94,102, third year 19,78,899, fourth year 19,89,436, fifth year 21,27,522. The gross revenue for the same years, after deducting the balances not recovered in the four first years, was—first year pagodas 21,53,607, second year 24,10,521, third year 25,47,096, fourth year 25,01,572, fifth year 25,81,550. The balances not recovered for the fifth year are not ascertained, and the sum stated is the whole jamábandi.

In the general disbursements of the government, the first head of subsidy to the Company, pagodas 8,42,592, is a fixed charge.

There is but one other head of general disbursements, *viz.*, the military establishment. The outline presented by Purnaiya to the Commissioners for the affairs of Mysore, estimates the number of troops necessary to be kept in the Raja's service for the security and tranquillity of the country, exclusively of the Company's troops maintained under the provisions of the subsidiary treaty, at "Five thousand Horse; from four to five thousand Barr formed after the manner of the Company's sepoys; and two thousand peons." The number which he considers to be necessary after an experience of five years, is—Horse, 2,000; Barr, 4,000; peons in constant pay 2,500; exclusively of a garrison battalion of 1,000 men on inferior pay for Mysore, and about an equal number of the same description for Manjarabad. The 2,000 Horse to be inclusive or exclusive of 500 stable Horse, according to the circumstances.

At a later period in 1805, Purnaiya is said to have represented the necessity of establishing separate departments of justice at Mysore; and a Court of Adalat was accordingly constituted, consisting of—2 Bakshis as Judges; 2 Sheristadars and 6 persons of respectability taken from the Mutfarkhat, and styled Cumtee Wallahs, Ilakims or Panchayatdars, who formed a standing Panchayat; with 1 Khazi and 1 Pandit.

There was no regular form of proceedings laid down for the observance of this court. The standing panchayat, composed as described, conducted the inquiry, *visá voce*, before the presiding judge or judges. No muchchalike was demanded from the parties binding them to abide by the verdict nor was the latter presented by the panchayat to the judge in writing. The plaintiff and defendant used to attend in person, and an examination was made of such witnesses and documents as they might have to produce; the witnesses were not examined upon oath, nor

had the practice of receiving the written statements and counter statements called *plaint*, *answer*, *reply* and *rejoinder*, been then introduced.

The two judges first appointed were Vyasa Rao and Ahmed Khan. The former was chief in rank, and possessed much of the confidence of Purnaiya, to whom he was in the habit of referring frequently in the course of the day such judicial questions as arose; whilst Ahmed Khan merely attended the minister in the evening to make his formal report and receive instructions. Besides his functions of judge, Vyasa Rao used to hear and determine, in the same court, all complaints whatever preferred by *ryots* on revenue matters, and on these subjects Ahmed Khan never exercised any control. In such disputes alone were *muchchalikes* or bonds taken from the applicants, binding them to abide by the decision which might be passed on their case. Vyasa Rao was also *Bakshi* of the *Shagird Pesha* or household department (in itself a very laborious office), as well as of the *Sandal cutcherry*. Both judges sat at the same time, and the decrees were submitted to their united judgment; in forming which, they were aided by the personal representation of such of the *panchayatdars* as had heard the case. In a simple matter the decision was usually confirmed and sealed when presented to the judges for that purpose, and a report of the decision was made at the close of the day to the prime minister, whose final confirmation was in all cases necessary. But when any difficulty occurred, the judges were accustomed to represent at once the circumstances to Purnaiya, and take his directions.

In this court both civil and criminal cases were heard. Matters of caste were referred for decision to the *Khazi* or *Pandit*, aided by a *panchayat* of such individuals as were considered competent. There was, however, little civil litigation in those days.

In the *taluks* also, during Purnaiya's administration, a course of proceeding similar to that already described under the ancient Hindu rulers, obtained; the parties either named a *panchayat* themselves, and agreed to abide by their decision, or they made application to the *taluk* authorities, who ordered a *panchayat*, usually composed of the *killedar* and two or three of the principal *yajmans* and *shettis*, and the matter was settled as they decided.

Thus was civil justice administered as long as Purnaiya continued in office, during the course of which period, Ahmed Khan, the second judge, died, and Vyasa Rao continued to sit alone.

Government of the late Raja, 1811—1831.

At the time of the British assumption in 1831, Mysore consisted of the following six Faujdáris, subdivided into 101 taluks.

<i>Faujdar.</i>		<i>Taluks.</i>		<i>Faujdar.</i>		<i>Taluks.</i>
Bangalore	}	...	27	Ashtagram	...	25
Madgiri				Manjarabad	...	11
Chitaldroog	...	13		Nagar	...	25

Some administrative details relative to the period of the late Raja's government during the preceding 21 years are subjoined, compiled from Notes on Mysore by Colonel Morison, written in 1833.

Land Revenue.—Before the Bangalore and Madgiri districts were brought under the government of Mysore, the villages of the Mahratta parganas were rented by Deshmuks and Deshpandes, and in the Pályams a kind of village rent was made with the inhabitants of each, and the revenue paid sometimes in kind and sometimes in money. There were certain rates of money assessment for wet lands, from 2 to 12 pagodas per khandi; and on dry lands from 2½ to 30 pagodas for the same quantity; while sugar-cane lands were taxed from 16 to 72 pagodas per khandi. The same mode was observed at the time of Haidar Ali and his successor Tippu Sultan. During the administration of Purnaiya, the lands were measured, but a regular assessment had not been accomplished. His government, however, was a strong one. The lands were regularly cultivated and all affairs conducted with efficiency and decision.

In Chitaldroog, in the time of the Vijayanagar dynasty, it is said that the government share of the land produce was no more than one-third, but there was an additional tax of 1½ Durgi pagoda on each plough. The Náiyaks who subsequently reigned in Chitaldroog established several new taxes, both in money and kind, on various occasions; for instance, at their festivals and religious ceremonies; but all these were consolidated by Haidar Ali and added to the kandáyam of the land. Tippu followed the same rule, but fixed an assessment of from 10 to 30 pagodas upon such lands as were cultivated from wells from which water was drawn by bullocks. As a relief, however, to the ryots, he granted rent free as much dry land as could be cultivated by one plough. Purnaiya, during his administration, and after the lands were measured, established the land tax in Chitaldroog at various rates per lubu, three of which are equal to one kudu, or ⅓ of the local khandi. This was in conformity with the ancient usage of that part of

the country, but the assessment already introduced under the rule of the Palegars, was still more rigid under the management of Purnaiya, and the only reduction afterwards allowed by the Raja was in the tax on sugar-cane lands.

In Ashtagram, in the time of Chikka Deva Raja, about the year 1673, a tax of 2 gold fanams per kudu, which is $\frac{1}{10}$ of the present khandi, was levied upon dry cultivation; while the produce of wet and garden lands, and of cocoa and areca nut trees, was divided between the ryots and the Sarkar. Again he appears to have fixed a kandayam upon lands, and newly established several other taxes called Bájebáb, &c. Very few of the ryots are said to have acceded to this arrangement. The produce of the land belonging to the ryots who did not was divided between the Sarkar and the ryots. Haidar Ali Khan appears to have introduced a grain rent in two of the Ashtagram taluks, namely, Sosile and Talkad, and in other parts of Ashtagram it remained as in former times. During the management of Tippu Sultan, a partial survey took place in several taluks, and an assessment both in money and in kind was levied. The grain from the taluks of Mysore Ashtagram, Patna Ashtagram, Sosile and Talkad was stored at the capital. During the administration of Purnaiya, the lands were regularly measured, the productive powers of wet lands were fully ascertained, and an adequate assessment fixed. Nothing new appears to have taken place in the time of the Raja.

In Manjarabad faujdari, Krishnarajkatte, Arkalgud, Harnhalli and Garudangiri were the ancient possessions of the Mysore princes, in whose time the tax for wet lands was at the rate of 5½ pagodas in Krishnarajkatte, and 3 pagodas in Arkalgud; a tax of from 2 to 5 pagodas per khandi on dry lands had been long established. There was no tax upon wet lands in the other two taluks, the produce having been divided between the ryots and the government, and the tax upon dry land was from

to per khandi.—In the palyam of Aigur, composed of the taluks of Maharajandurga, Manjarabad, Sakaraypatna, Belur and Hassan, Sivappa Nayak, the chief of Nagur, established his own assessment called shist, while it was in his possession; and it still existed, with some few alterations, even after the country reverted to the palegar of Aigur. There appears to have been no measurement of land in any part of this territory. The shist amounting to a certain sum was fixed upon a given quantity of land, including a proportion of dry, wet and garden land. During the management of Haidar Ali and Tippu, the

village rent was irregular, being disposed of by competition and collected accordingly. In the time of Purnaiya, the public servants went so far as to ascertain the condition of each individual, as in the ryotwar ; but during the management of the Raja, the country reverted to the injurious system of renting the villages to the highest bidder.—The land tax in Narsipur taluk, in the time of the Palegar of that place, varied from 6 to 12 pagodas a khandi for wet lands, and from 1 to 6 pagodas a khandi for dry lands; the produce of areca nut trees and a part of that of cocoa nut trees was divided between the ryots and Sarkar, and part of the produce of the latter trees was assessed at 1 fanam per two or three trees. Haidar Ali and Tippu continued the system of village rent ; but much improvement was introduced by Purnaiya in having erected several dams on the river Hemavati, and dug about six water-courses, which proved highly beneficial to cultivation, while the mode of collection was revised as in other places, and affairs generally improved. Nothing new was introduced by the Raja.—Banavar formerly belonged to the palegar of Tarikere, and in it the system of village rent appears to have existed first and last.

In Nagar, Sivappa Nayak made an assessment in the year 1660, called shist, on the lands. This assessment was a most judicious one consistent with the localities and general condition of the country. Several taxes called patti were afterwards levied by his several successors, which ultimately became equal to the shist originally fixed, so that the actual beriz of the country was in time nearly doubled.

The amount of revenue of all descriptions in Mysore for the year 1831—32, was Kanthiraya pagodas 20,88,978 ; of which the land revenue was said to be 16,18,831 ; the amount of sayar, including the monopolies of the five articles, *viz.*, tobacco, betel leaves, ganja, toddy and arrack, was 4,01,108 ; and that of the other taxes of various kinds, under the head of Bájebáb, was 69,039.

The amount of Kanthiraya pagodas 16,18,831 said to be the land revenue, did not however wholly belong to it ; for it appears that various taxes both connected and unconnected with the land revenue were mixed up with that head. The land revenue properly so called was known under two designations only, *viz.*, kandáyam and shist : the first to be found in every part of Mysore, with the exception of Nagar, and the second to be found in the Nagar district only. The inferior taxes directly connected with the land revenue and mixed up with it consisted

of 83 different designations, under which these taxes were levied. The inferior taxes unconnected with the land revenue, but also mixed up with it like the foregoing, consisted of 198 different designations, some of which prevailed all over Mysore, some less in general, and some to be found only in one or two of the taluks. In endeavouring to classify these inferior taxes, some appear to belong to the Mohatarfa, some to the Bajebab, and some to the Sáyar.

The country was under the management of Purnaiya for eleven years, that is from 1800 to 1810. The highest amount of the jamabandi during that period was 31,79,000 Kanthiraya pagodas, which was in the year 1809; the average during his management being no less than 27,84,327 pagodas. The country was managed by His Highness the Raja, for twenty one years from 1811 to 1831. The highest amount of the jamabandi during that period was 30,26,594, and the average was 26,53,614 pagodas. The difference between these averages, 1,30,713 Kanthiraya pagodas, is therefore the amount of the annual decrease during the administration of the Raja. It would be very desirable to ascertain what quantity of land produced the revenues above mentioned, but unfortunately there were no accounts shewing the necessary information in any of the cutcherries of the Huzur. This must be sought for in the village accounts and from the shanbhogs.

It was an ancient rule in the country, and duly provided for in the instructions to the district servants, that the shanbhog or the village accountant, the patel, and shekdar if present, should assemble in every village before the commencement of the year, and then collect all the inhabitants of the village for the purpose of speaking to them upon the subject of the rent, and concluding with them a revenue arrangement for the year, duly recording the name of each person, the extent of land to be cultivated by him, and the amount of revenue payable thereon; as also the extent of the land (if there were any) intended to be cultivated as wáram, and issuing to each ryot of the kandáyam land a kandáyam chit for the year. It was only indeed by means of these preliminary arrangements, that any satisfactory data could be obtained as the foundation of the jamabandi, and it is fortunate that the custom so far prevailed in procuring so useful a document preparatory to the annual jamabandi whereby the extent of land of every description in every village could be easily known.

The whole extent of cultivated land in Mysore appears to have been

in the proportion of three-eighths wet to five-eighths of dry cultivation. The lands not being classed, it is impossible to shew their description, but upon an estimate it appears, that the land of red colour was five-sixteenths, the land of the mixed sorts was one-fourth, black clay, three-sixteenths, and that mixed with chunam, stones, pebbles, including rough land, was one-fourth.

The water-courses taken from rivers and mountain torrents were rated at 1,832 in number. The tanks, great and small, at 19,817; and the wells at 16,371. The grain irrigated from these was chiefly paddy, but garden articles were reared by the same means. All other crops depended on the periodical rains, but for want of accounts at the Huzur, it is not practicable to ascertain the quantities of land supplied with water from each of these resources.

The crops being cut at the proper periods, the first deductions from the grain were the rusums issued at the threshing floor to the Bárabalúti. The rates at which these different persons were paid were various in the several Faujdaris. The exact proportion of the produce thus appropriated, is shewn in the following table.

Faujdaris.			Centage of the Rusums to the gross produce when lands were under Kandáyam.	Centage of the Rusums to the gross produce when lands were under Wáram.
Bangalore and Madgiri	...	..	5	5
Chitaldroog	...	...	14	20
Ashtagram	...	...	8½	8½
Manjarabad	...	...	6½	3
Nagar	...	...	{ 12½	...
			{ 15	...

If the produce were that of kandáyam lands, it was taken by the inhabitants to their houses on paying the rusums at the above rates. If the produce were that of the wáram lands, the rusums were given in like manner to the Bárabalúti in the first instance; the remainder being then divided between the Sarkar and the ryots who had cultivated the same.

The general average kandáyam or government rent was usually about one-third of the gross produce. This at least was the case in Bangalore, Madgiri and Ashtagram. In Chitaldroog however the kandáyam seems to have been about 18 per cent more than one-third; but as labour was cheaper there than in other Divisions, the ryot was nearly as well off as anywhere else. In Manjarabad, the assessment was 5 per cent, and agricultural charges nearly 2 per cent more, rendering the surplus to the ryot nearly 7 per cent less. In Nagar the agricultural charges are higher than

elsewhere so that the kandayam falls off 3 per cent, and the surplus to the ryot 9 per cent, below the proportionate rate of Bangalore, Madgiri and Ashtagram.

In other countries there are ryots who pay a large sum in rent to government, in some instances to the extent of 10,000 rupees a year. It is not so in Mysore, and from many inquiries it appears that amongst 384,702 ryots, the highest, the medium, and the lowest kandayam rent paid by one individual in the several Faujdaris were as shewn in the following table.

Faujdaris.	Highest.	Medium.	Lowest.
	Rs.	Rs.	Rs.
Bangalore } Madgiri }	50	10	3
Chitaldroog ...	100	50	1
Ashtagram ...	200	150	2
Manjarabad ...	100	50	3
Nagar (including areca nut)...	300	150	10

There was seldom to be found more than one village in the possession of one individual, nor did one person anywhere possess one description of land only; for each ryot having dry land, had generally a proportion of wet and garden also, at all events one or other of the two last. The condition of the people in Mysore seems to demand this arrangement, which is everywhere of easy accomplishment in Mysore.

The highest, medium, and the lowest extent of land, including wet and dry, held by one individual in each Faujdari, were ascertained, and are exhibited in the following table.

Faujdaris.	Highest.	Medium.	Lowest.
	Khandis.	Khandis.	Khandis.
Bangalore } Madgiri }	9	3½	¾
Chitaldroog ...	20	12	½
Ashtagram ...	12	5	1
Manjarabad ...	30	15	1
Nagar ...	0	0	0

The rates of kandayam were various throughout the country. The following is a general abstract of the average amount of kandayam assessed upon one khandi of land of all descriptions in Mysore in Kanthiraya pagodas.

Faujdaris.	Wet land.				Dry land.				Cocoa garden.				Garden land.				Sugar-cane.			
	1st sort.	2nd sort.	3rd sort.	4th sort.	1st sort.	2nd sort.	3rd sort.	4th sort.	1st sort.	2nd sort.	3rd sort.	4th sort.	1st sort.	2nd sort.	3rd sort.	4th sort.	1st sort.	2nd sort.	3rd sort.	4th sort.
Bangalore ...	0	0	0	0	20	16	12	10	0	0	0	0	16	12	10	8	60	50	40	30
Madgiri ...	5	4	3	2	16	12	10	8	30	25	20	16	0	0	0	0	15	13	10	8
Chitaldroog ...	12	9	7	6	25	18	13	10	20	15	12	10	0	0	0	0	32	28	25	20
Ashtagam ...	15	10	5	4	25	10	8	3	50	38	25	12	10	8	6	4	38	26	14	8
Manjarabad ...	12	8	5	3	10	6	3	1	25	15	10	0	0	0	0	0	22	15	10	0
Nagar ...	6	5	4	3-5	10	8	6	5	20	13	10	6	0	0	0	0	5-7-8	4-7-8	4	3-5

It is now necessary to advert to the tenures of the land.

1st. The ryots cultivating *kandiyam* lands, held them in some instances from generation to generation, paying a fixed money rent; this being now the general meaning of the word *kandiyam*, whatever it may have been originally.

2nd. Ryots cultivating the lands under the *waram* or *batayi* system, whether in the same or other villages, were nothing more than hired labourers. They cultivated the land and received in return a share of the produce. The people of any village in which these lands existed had the preference before others; nor could they be refused the work, if they had tilled the lands for a number of years; that is, if they still chose to cultivate the same. In some cases the ryots of the same village, and even those from other villages, were forced to undertake the cultivation of the *waram* lands which belonged to the Sarkar.

3rd. In certain places there were tanks called *amuni talav* not belonging to any particular village. The lands under these reservoirs were cultivated by ryots collected from several villages in their neighbourhood, who received their due share of the produce, under the superintendence of the public servants.

4th. There were ryots who cultivated *shraya* lands, that is, lands held by those who engaged to pay a reduced *kandiyam* for three or four years, and from the last year to pay the full amount.

5th. There were ryots who held entire villages for a fixed rent called *kadyamgutta*, for which they received regular grants without any period being specified. This tenure had its origin in the time of the Raja to favour certain individuals.

6th. There were ryots called *jodidars*, or those who held lands under a favourable rent, which lands or even villages were formerly inam enjoyed by Brahmans and others rent free until the time of Tippu Sultan, who, from his aversion towards the Hindu religion, sequestered the jodi lands, and levied upon them the full assessment. The Brahmans, however, continued to hold them, paying the full assessment rather than give them up, hoping for more favourable times: accordingly in the administration of Purnaiya their complaints were heard, and they received the indulgence of a small remission of the Sultan's

assessment, and continued to hold the lands under the denomination of jodi though no longer inam. In a very few instances, however, some lands continued in jodi, as given in ancient times, and were as such still enjoyed.

Ryots possessing kandáyam lands and paying the full assessment could only be dispossessed when they failed to pay their rent to the Sarkar. Ryots possessing kandáyam lands but paying less than the fixed assessment or original kandáyam might be dispossessed in favour of ryots offering an increase, if they did not choose to give the same. Suppose, for example, that 12 pagodas was the original assessment, but that it had been reduced to 8 pagodas in consequence of the death or desertion of the ryot, when it was transferred to wáram and cultivated on the Sarkar account, occasioning the revenue to be reduced to 8 pagodas as first mentioned. Supposing then that 10 pagodas were offered and accepted; but as this offer was still short of the former kandáyam, though above what could be realized under the wáram management, offers would continue to be received from any one willing to give the full amount, though the actual incumbent had the preference if he should choose to pay the full assessment. If not, he must make way for the new tenant willing to pay in full.

The ryots who cultivated areca nut gardens appear to have had the right of hereditary possessors: they were accordingly accustomed to sell or mortgage their property. Supposing these proprietors to fail in payment of the Sarkar and that the same should fall into arrear, the proprietor might sell his lands and pay the dues of government, when the purchaser had the same rights in the soil as were possessed by his predecessor.

There were ryots who possessed lands which either themselves or their ancestors had reclaimed from the jungle at great expense. These lands were also held as hereditary possessions, with the right of disposing of them by sale or otherwise.

There were also ryots who held their lands by long descent from generation to generation, who were in the habit of transferring the same to others either by sale, or mortgage, &c.

There were ryots who cultivated lands called *kodagi*, on which an invariable rent was fixed, not liable to any change on account of the seasons or otherwise. These lands were also saleable, and at the present day continue to be disposed of at the will of the holders. These lands originally were inams from the sovereigns or the villagers, but having been subsequently assumed by the Sarkar, an unchangeable rent was fixed upon them. Again, some ryots cultivated lands called kodagi lands, which were originally inam granted by the Sarkar for the payment of a sum of money as a nazar, but latterly subjected to the same fate as the lands described above. Lands of both descriptions were also to be found in the Manjarabad district.

There were ryots who cultivated land for an assessment called *shist*, and who had been subjected at different periods to additional imposts since the *shist* was originally established by Sivappa Nayak; they still had pretensions to a proprietary right in the soil.

There were ryots who cultivated lands called *rekanast*, which under the reign of the princes of Vijayanagar had an assessment called *Ráyaréka*, but having subsequently been overrun with jungle, no *Ráyaréka* or assessment was levied thereon. They were then called *rekanast*, which means, without assessment, nor was any *shist* put upon them by Sivappa Nayak, because they were not cultivated. When reclaimed, however, they became liable to assessment at the average rate of the neighbouring lands, still retaining the same names. These lands are accordingly described as a distinct variety of tenure still known in the Nagar district.

There were ryots called *jodi agraahardars*, cultivating lands in some villages of Nagar under an assessment called *jodi*, which might be equal to one-fifth, one fourth, one third, or even one-half of the *shist* of the neighbouring villages. These lands were formerly *inam* or *sarvamányam* given to Brahmans, who long enjoyed them as such, but being resumed by the Sarkar, taxes were put upon them in the manner above mentioned. The descendants of the original holders, or those who may have purchased the lands from them, enjoyed them for the payment of the fixed *shist*; and it appears that the sale and mortgage of these lands was going on to the present day, the transfer being fully recognized by the officers of government.

There were ryots who cultivated lands called *gadli batta*, which signifies lands paying rent in kind, which were only met with in the taluks of Ikkeri, Sagar, Mandagadde, Koppa, and Kavaledroog.

The ryots in possession of the lands held under the tenures above described, appear in general to have paid their rents to the Sarkar, not direct, but through the means of a renter, capable of managing so intricate a business, from possessing a complete knowledge of all the local customs. Sometimes the patel was a renter of the village, and collected the revenue from the people without the intervention of the Sarkar servants. This sort of *village rent* had as many varieties as are indicated by the different modes now to be mentioned.

The ordinary mode was effected by the Amildar, Sheristadar, and some other servants setting out together in the month of January or February for the purpose of inspecting the crop. During the tour of the Amildar at this season, he prepared an estimate of the November crops (already in heaps) in communication with the sheristadars, shekdars, shanbhogs and patels, as also an estimate of the expected revenue from the May crop. In the same manner

an estimate was made of the sugar-cane and other produce now coming forward, when the total being made out, the rent was given to the patel or gauda of the village, and the usual rent *muchchalike* taken from him for the payment of the amount, including *suvarnádāyam*. The patel being the sole renter of the village, any *suvarnádāyam* which may have been already collected was credited to him. He considered himself answerable for the rest, took charge of all the affairs of the rent, distributed the due shares of the different crops to the ryots, disposed of the government share in the manner he thought best for his own benefit, collected *kardāyanu* from the inhabitants, and paid his rent to the Sarkar. In case of any part of the revenue falling in arrears, either from the death, desertion, or poverty of the ryots, or from any other causes, the amount, if large and irrecoverable, was remitted after a full investigation of all the particulars of the case; otherwise the renter remained answerable for the payment of the whole of the rent. This mode of village rent generally prevailed in the faujdaris of Bangalore, Madgiri, Chitaldroog and Ashtagram.

In the villages of Manjarabad, the village rent was given for two years, while the rent of one village might be taken by two or three individuals. If a village were desolated, it was rented to any individual willing to take it. No rent was payable the first year, but engagements must be entered into to pay a small rent the second year, increasing the same gradually every subsequent year, until it came up to the former fixed rent.

In Nagar, there was a permanent assessment called *shist*. A general review was made of the lands at the beginning of the year to ascertain the probability of their being cultivated. The Amildar, when he proceeded to the village for this purpose in the month of January, ascertained the general state of cultivation and concluded the rent with the patel of each village. If, however, the whole land of any individual ryot was kept uncultivated from poverty, the revenue of that land was remitted. If a part only of the land of one individual was cultivated, no remission was allowed on account of the part uncultivated, the whole being included in the *jamabandi*. The *wáram* system was but little known in Nagar, but when it did occur, the usual course of taxing that produce was observed as in other parts of the country.

The mode of village rent called *wonti gulla*, was when two, three, or four individuals (whether of the same village or others) made an offer to rent a village. After its circumstances were duly ascertained in the usual manner, and the terms were agreed on, the Amildar granted the rent and took security for its payment, and in such cases there were no remissions, the renters being answerable for the amount settled. They were however obliged to enter into fair agreements with the ryots, which were to be strictly kept, so that the ryots might not have to complain of any exaction or oppression. If any arrears should be caused by the death, desertion, or the poverty of the ryots after the

rent was fixed, the loss must be borne by the renter. When the ryots were averse to any particular renter or renters, it was not unusual for them to take the rent themselves, declaring they would otherwise leave the village. In such cases a preference was given to their offers.

The mode of village rent called *praja gutta* may be described as follows. The Amildar proceeded to the village at the usual period of the year (that is December or January), called for all the ryots, and desired them to enter into engagements of the rent of *praja gutta*. The amount to be rented was in most cases the same as in the preceding year. Any lands which could not be cultivated, either from the death, desertion, or poverty of certain ryots, was now struck off, and fresh lands, if there were any, added to the rent; when a general muchchalike was taken from the whole of the ryots, or from such portion of the principal ones as might engage for the rent: if the actual produce fell short, the loss was borne by the whole village. If a higher offer were received, even after the conclusion of these arrangements, the rent was cancelled and given up to the other, but the rent in this case would be called *wonti gutta*. The rent once settled in one year was allowed to continue for the next three or four years. This kind of rent appears to have been a last resource, to which the public officers had recourse when every other had failed; but these rents, *viz.*, *wonti gutta* and *praja gutta*, were only very partially known, and in the *faujdar* of *Ashtagram*.

The village rent called *kulgar gutta* was when it was managed by the *kulgars*. Of these there might be six or eight in a village, together with 15, 20 or 30 common ryots. The Amildar proceeded to each village in the month of December or January, investigated the real state of the different sources of revenue with reference to the collections in the past year and the condition of the ryots, fixed the amount of the rent, and gave it up to one of the *kulgars* of the village, who sublet his rent to the other *kulgars*, who again divided their respective allotments amongst the ryots under them. The only way they made a profit in their rent was by exerting themselves to extend the cultivation. The ryots of the village were answerable for their rent to the *kulgars*, these to the chief *kulgar*, who in his turn, as the ostensible renter, was answerable to the *Sarkar*, which in the case of this rent allowed no remissions. If any of the ryots had either died or deserted, his lands, as well as claims against it, were divided among the *kulgars* themselves. If there were no *kulgar* in the village to take the office of renter, a *shanbhog* might become so, when he was called the *pattegar*.

The village rent called *chigar kalle* comes next to be mentioned. A proportion of land including wet and dry, and requiring 50 seers of seed grain, was called a *chigar*, of which there might be from 16 to 18 in a village, each paying a fixed rent of from 3 to 5 pagodas; each *chigar* was usually held by several

ryots, there being a principal ryot for every chigar of land, and one of these annually rented the whole village, sub-letting the different chigars to the other principal ryots: such villages were generally rented in the month of December or January, when the state of the crops was ascertained, but this species of rent was only to be found in one taluk, Hassan, in the faujdari of Manjarabad.

There was also a village rent called *blah kalle* in the same taluk, the *blah* meaning a small portion of land differing in extent from the chigar, but having the same mode of assessment; and if any of the ryots died or deserted, a portion of rent was remitted by the Sarkar, giving that land to others.

Sayar.—There were certain stations called *katties* in every taluk, where the *sayar* duties were levied on all articles. The total number of these stations was no less than 761, varying in number from 1 to 21 in each taluk. The duties levied were of three kinds,—1st. Transit duty upon such goods as passed on the high roads without coming into towns. 2nd. Transit duties on articles passing out of the towns. 3rd. Consumption duties upon goods used in towns. Whenever goods arrived at a station, the place to which they were destined was ascertained, when the duties were levied according to rates said to be established for the purpose on the spot.

The rates of duties were various, those observed in one station being different at another. The duties were not charged *ad valorem*, but according to the kind of each article, neither was there any regularity with respect to the quantities chargeable with duties, for example, a cart load, a bullock load, an ass's load, a man's load, &c., were charged with so many fanams each. In some of the taluks, goods charged with duties at one station were liable to be charged again with a reduced but extra duty at some other place even in the same taluk; the extra duty was called *anup* and *kottamugam*. In some taluks goods were liable to duties at every station of the same taluk through which they had to pass. In others, the duties levied on goods conveyed by a particular class of merchants were different from those charged when conveyed by others. In some taluks the duty was at a fixed rate provided they passed by a certain road. If goods chargeable with duty in one year should be kept till the next year, and then sent away, they were again chargeable with duty.

In several of the districts periodical markets were held, generally once a week, when fixed taxes were levied upon the shops. 1st. Every shop paid a few cash, and this tax was called *addi kasu*. 2nd. Every vegetable shop paid something in kind, under the name of *fuski*. 3rd. Every cloth shop paid a tax of from 2 to 6 cash, called *wundige* or shop

duty. 4th. There was a tax called *pattadi*, which in some places was called *karve* and *bidagi*, levied on every cloth shop, grain, mutton, and arrack shop, &c. There was likewise a certain tax upon every loom ; also upon betel leaf plantations, areca nut gardens, sugar-cane plantations, and upon every plough of the ryots, exclusive of the land revenue. There was a tax on the cattle of merchants. The taxes on the above were collected some annually, some monthly, and daily from temporary shops. In short, there was not a single article exempt from custom duties.

It is true that tariff tables, called *prahara pattis*, exhibiting the rate of duty to be paid on each article, were at one time issued by the Sarkar, and posted up in most of the *kattēs*, but the Government itself was the first to infringe the rules, by granting *kauls*, of entire or partial exemption, to certain favoured individuals ; and the same mischievous system was further propagated by the granting of similar *kauls* by successive *izardars* and sub-renters to their own particular friends during their own period of incumbency, and which became confounded with those granted by the Sarkar. The consequence was that in the course of time the *prahara pattis* were looked upon as so much waste paper, and each *kattē* came to have a set *mámul* or local rates of its own, which were seldom claimed without an attempt at imposition, or admitted without a wrangle. The usual result was an appeal to the Sayar Shanbhog of the place, who became the standing referee in all disputed cases, which he may be supposed to have decided in favour of the party which made it most advantageous to himself.

It became necessary therefore for the trader to purchase the good will of every sayar servant along the whole line of road by which he travelled, or to submit to incessant inconvenience and detention. He was thus subject to constant loss of time, or money, or both ; and the merchants were unable to calculate either the time which their goods would take to reach a particular spot, or the expenses which would attend their carriage. Even as to the *kauls* which certain merchants enjoyed, there were perplexing differences in the way in which the deductions were calculated. With some it was a fixed percentage to be deducted from the proper rate to be levied ; while with others the full rate was taken, but only on certain fixed proportion of the goods. Another fertile source of confusion and corruption was that, to gratify some particular *izardars*, certain merchants and certain productions were confined

to particular routes ; and, if they travelled or were carried by another line of custom houses, the izardars of that line were made to pay compensation for the loss presumed to have been sustained by the renters of the prescribed line.

When it is considered that there was hardly a luxury, certainly not a necessary of life, which was not subject to pay the duty to the authorities of these 761 sayar chaukis, and that some of these duties were payable daily, some monthly, and some annually ; while there were others of items which involved the necessity of a prying scrutiny into the most private and delicate domestic occurrences, it may be imagined that the system was calculated to interfere constantly with the comfort and the interests of every portion of the population. It is possible indeed that it may have been framed originally with some such idea, for a legend current in Mysore assigns the palm of wisdom among monarchs to a prince who invented 365 taxes, each leviable on its own particular day, so that no 24 hours could pass without the idea of the prince's power having been brought home to each of his subjects in the most unmistakeable way.

Great as was the direct annoyance to the people, the indirect, by the obstacles thrown in the way of trade, became still greater. In fact stranger merchants were practically debarred from entering the country, and the whole of the trade, such as it was, became monopolized by the Sayar contractors or their servants, and a few practised traders who were in close alliance with them or knew how to command powerful interest at the Darbar.

The systems in force in the four different Divisions of Nagar, Ashtagram, Bangalore and Chitaldroog, were widely different. Under the Raja's administration, the Sayar department in Nagar was divided into three Ilákhas or branches. 1st. *The Kauledroog Sarsáyar*, including the Chikmagalur, Koppa, Kauledroog, Holehonnur, Lakvalli and Shimoga taluks, and the kasba town of Channagiri. 2nd. *The Ikkéri Sarsáyar*, comprising the Honnali, Sagar, Shikarapur and Sorab taluks, together with the kasba of Bellandur in Nagar taluk. 3rd. *The Phoot Taluk Izára*, comprehending the Kadur, Harihar, Tarikere and Channagiri taluks, with the exception of the kasba of the last, which was included in the Kauledroog Sarsayar.

The Phoot Taluk Izara was rented by a Wot Izardar, who bound himself by his muchchalika to realize a certain annual sum for the

Sarkar, and whatever he could scrape together or extort beyond that sum was his own property. The two Sarsayar Ilakhas were made over to the management of Sarsayar Amildars, nominated on the *sharti* system of bestowing the appointment, without reference to qualification, on the man who would bid highest for it. It was stipulated that they were not to keep the executive in their own hands but were to sublet it to others, over whom they were to exercise vigilant control, and in particular to prevent all undue exactions and oppression. But these were mere words. These Amildars almost invariably retained the collections in their own hands, and knowing that they were liable to supersession at any moment, their sole object was to feather their nests in the shortest possible period. In cases where the agency of sub-renters was really employed, the same description will apply, with the additional touches which must be given to enable the reader to understand that the trader was even more victimized than when his oppressor carried on his transactions on a larger scale. These sub-renters themselves obtained their appointment on the *sharti* system, and had to squeeze out a double profit to remunerate both themselves and their employer, while the permanency of their appointment was more dubious than his, inasmuch as they not only might be turned out at his pleasure, but were also removable along with him when he was superseded from the Darbar. These subrenters therefore had to work double tides to make up a purse, and endless were the devices resorted to. Some contented themselves with squeezing more than was due from every trader who passed through their hands, while others, with more enlightened views in the science of extortion, attracted merchants to their own particular line of kattes, by entering into private arrangements with them to let their goods pass through at comparatively light rates.

The *sáyar* collections in Nagar were classed under three heads. 1st. *Hálat*, or the excise duties levied on areca nut, cardamoms and pepper, on removal from the place of their production. 2nd. *Charádúya*, or transit and town dues. 3rd. *Kíraka*, which may be described as a composition for *sayar*, being a tax paid by certain classes for relief from payment of *sayar* duties. For carrying out the complicated *sayar* system in this Division, there were sixty kattes established, of which thirty-one were frontier, and twenty-nine internal. The establishments of such of these as were situated in the two Sarsayar Ilakhas were paid by the

Government, the remainder by the Wot izardar. Of the former there were 52 and of the latter 8.

The sayar of the Ashtagram Faujdari was put up to auction, and rented, sometimes by single taluks, sometimes in a number combined, and sometimes the whole in one lump, to the highest bidder. The renter had to find security, and both renter and security had to execute muchchalikas. In general the security was the real renter, but sometimes both were merely agents of a third party who did not choose to come forward. There were occasional but rare instances of particular taluks being kept under amāni. When the muchchalika and security bond were executed, orders were issued to place the renter in charge of the various items of revenue which he had farmed. This being done, he proceeded to sublet them in any manner he pleased, or to retain the management in his own hands if he preferred it. The Government does not appear to have reserved to itself any right to interfere in the arrangements of the renter, and as each of his subrenters on appointment became an acknowledged public servant and adopted a seal of office, it may easily be supposed in how many ways they had it in their power to interfere not only in the trade of the country but in the private affairs of every individual.

The same confusion existed with regard to the items which constituted sayar as in the Nagar Division. It was nominally divided into the heads of *marg* and *pattali*. Under the head of *marg*, properly speaking, came all the items which we should call land customs, with multifarious additions, varying in each taluk and in particular parts of the same taluk. Among them may be mentioned the *shádi kutike* rents, or taxes on marriage, concubinage, births, deaths and other domestic occurrences. Of more than one hundred items which came under the head of *pattadi*, there was not a single one which ought rightly to have been included in the sayar. They were all of them money assessments, mostly personal in their nature, and levied direct from the ryots. They consisted of taxes on individuals on account of their castes or professions, and of fees levied from ryots for permission to make earth salt, to fish in tanks and streams, to collect emery stones, to gather honey, cardamoms and other jungle products, or in some places to sell the produce of their own lands. The poor wretches even who eked out a scanty livelihood by collecting white ants for food, did not escape without a tax for so doing. One item of the pattadi revenue deserves particular mention. It

was an extra tax collected from the ryots as a percentage upon, not out of, the land revenue they paid to Government. It varied in particular taluks from 1 to 5 fanams in the pagoda, or from 10 to 50 per cent exacted from the ryot in excess of his original rent.

The seat of government being in the Ashtagram Division, the prahara pattis or Sarkar tariff tables were nominally more regarded than in the distance province of Nagar. There was no rule, however, compelling the sayar renters to abide by the rates set down; and even if there had been, there would still have been more confusion than enough, for the duty on some articles was to be calculated by weight, on others by measurement, on others by number, and on others again by cart, bullock, ass or cooly load. These modes of computation too were not uniform throughout the Division, but differed in every taluk, and even in every katte. They were in fact left very much to the caprice of the chaukidar of the katte, and were another fertile source of extortion and delay. Other anomalies consisted in the levying of different rates from different descriptions of merchants; the lower rates probably having grown into māmúl from having been originally the result of a corrupt arrangement between the renter and the merchant. For instance, salt passed free into the town of Mysore if brought by one particular class of people; and in the Belur taluk, two bullock loads of supari were passed as one load if carried by Kormars, Lambanis or Waddars. The collusive system by which traffic was attracted to one particular line to the prejudice of others was in force in the Ashtagram as much as in the Nagar Division.

If the Nagar Division suffered in some respects from its distance from the Darbar, Ashtagram was in its turn victimized from its propinquity, for the returns shew that there were no fewer than 331 kattes in this Division alone. It is said to have been no uncommon thing to reward a favourite by the imposition of a new tax, or the institution of a new katte, and the name of a mendicant called Mohant is remembered from a privilege which was granted to him for a time of exacting a fee from every person passing into Mysore from a particular direction. The mendicant was soon deprived of this right, but the toll was continued under the title of the Mohant rusúm, and put up to auction along with the other items of sayar. In the immediate neighbourhood of Mysore these kattes were so close together that there were few roads on which the goods of a merchant were not stopped, and (unless he came to terms) unloaded and ransacked, at least four times in the course of an ordinary

day's journey. Even more than this: a particular bridge is mentioned, on which at one time there were three of these kattes—one at each end and one over the centre arch!

In the Bangalore Division, probably owing to its containing the large British Cantonment, abuses were much less rife than in Nagar and Ash-tagram, and the rules for levying the sayar duties which were in force in the time of Purnaiya, were continued without change or modification up to 1846—7, under izardars, to whom the sayar was annually rented on competition.

*Pānch bāb.**—The *tobacco* monopoly existed in 33 taluks only. In Bangalore this rent existed only in the town and its dependencies, called volagadis. The renter purchased the article from the cultivators or imported it from Salem, at from 4 to 10 fanams per maund of 49 seers, and disposed of the same to the bazar men at from 12 to 23 fanams per maund of 40 seers. The bazar people retailed the article at a small profit of one fanam per maund.

The monopoly of *betel-leaf* was not general, being found only in 15 districts. In Bangalore the custom was to employ a renter; he bought at 20 bundles for one fanam, and sold to the public servants at 16 bundles the fanam, to the bazar men at 8, and at 10 to the public servants in the Cantonment. The bazar men sold in retail at $7\frac{1}{4}$ bundles the fanam; the remaining $\frac{3}{4}$ of one bundle of the 8 received from the renter being the profit of the bazar men.

The monopoly of *ganja* existed only in a very few taluks. It was confined in Bangalore to the town. The renter purchased his supplies at the rate of from 12 to $24\frac{1}{2}$ fanams the maund, and sold it to the bazar people at from 3 to 7 pagodas. The affairs of this rent were carried on by the people of the tobacco depôts.

The rent of *arrack* was taken by an individual in each taluk. The renter either sublet portions of his rent to others or managed it in *amāni*. If he sublet it, the under farmers engaged to pay their rent either for every shop or for each village. If kept in *amāni*, the renter established manufactories, where the arrack was prepared for distribution, employed his own servants and caused the arrack to be sold by retail at the usual rates. There was no uniform rule as to the extent of the farms, as one man might be the renter of one taluk or twenty; while there were

* In the old reports this name, which means the Five Items, appears under the ludicrous form of *Punch Bob*.

some taluks rented to several. There were two classes of persons, the one called Bedar and the other Kalala, who had been accustomed from ancient times to manage the arrack trade and to rent the sales from the Sarkar; but in latter times the business seems to have been open to all classes. There was a tax on adultery by women of the Bedar and Kalala castes, and also on their marriages, which was farmed with the arrack.

The rent of *toddy*, which was not general in all the taluks, consisted chiefly of what was obtained from the lands occupied by the wild date tree, and was levied annually. These were sometimes called *séndi* trees. In some cases every sendi shop was taxed, but the tax was most generally levied on the beast of burden which conveyed the sendi to the shops; or on the leathern bags which contained the liquor. The renter realized the tax monthly. In some taluks there were no trees from which toddy could be extracted, but shops were still maintained by a caste called Idigar, who acted under a renter and supplied themselves from other taluks. In several taluks the person who rented this article employed his own people both to extract toddy from the trees and to sell it in retail, paying them hire for their labour. There were certain taxes payable by these people on their marriages, on the fornication and adultery of their women, and on other occurrences, all of which made part of the rent. When the toddy or sendi was not rented, the taxes were collected in *amáni*, according to the usual rates, by the shekdar, or by such an establishment as might be kept up for management of the Bájebab taxes. The accounts of this revenue were not kept distinct, but mixed up with that of arrack.

Civil Justice.—Of the system of judicature, civil and criminal, as it existed during the Raja's government, a report of 1838, by the late Sir Mark Cubbon, contains a full and lucid account, from which the succeeding paragraphs are compiled.

When the Raja assumed the reigns of government, considerable alterations were, with the concurrence of the Resident, made in the judicial department. A new Sadar Court was established at Mysore, with two Bakshis at its head, and under it were three inferior courts each under two presidents called Hákims. Amongst these courts the business was divided as follows. The Sadar Court heard and decided all civil causes above 500 rupees; it received reports of the decisions of the three inferior branches of the court, confirmed or revised them, and inspected and sealed their decrees, without which no decision was consi-

dered valid. The second court had jurisdiction in civil causes, from 100 to 500 rupees. The third court had jurisdiction in suits not exceeding 100 rupees. The fourth court undertook the magisterial department, which will be more particularly adverted to hereafter.

Although these four courts sat in one place, and were all under the control of the chief judges, yet each had its separate establishment of public servants. The forms of their proceedings were adopted from the judicial regulations in force in the Madras Presidency. They examined witnesses upon oath. Two statements were taken from the plaintiff—the *plaint* and the *answer*—, and two counter-statements—the *reply* and the *rejoinder*—from the defendant; and institution fees were levied upon suits. Two-thirds of the amount of these fees were, when realized, credited to the Sarkar, and the remaining third was paid to the authorized vakils employed in the cause. There was no express provision for an appeal to the Raja from the decision of the Sadar Court; nevertheless, when parties complained to the Raja, he used often to call on the judges for explanation.

The two first Baksbis who sat in the Sadar Court, thus newly constituted, were Bakar Saib, and Gulam Mohi ud din Mekri. For the first year and a half after their appointment it would seem that justice was equally and duly administered, and though the judges were subject to the solicitations of the Raja's courtiers, yet no real hindrance was offered to the course of justice so long as they steadily resisted all attempts made to influence their decisions. After this interval, the orders of the court issued upon its ordinary business to the various cutcherries began to be neglected by the public officers of the state; the minions of the Darbar increased their interference, and the chief judge, Bakar Saib, a man reputed for integrity and independence of character, finding that they were encouraged rather than checked, refused to exercise his judicial functions any longer, and retired to his own house. After a lapse of four or five months, the Resident, by earnest representations to His Highness the Raja, and persuasions to Bakar Saib, prevailed on the latter to resume his duties. He accordingly acted as chief judge for a year longer, during which period the business of the court, so long as His Highness happened to be pleased with the Resident, went on uninterruptedly; but whenever this harmony was disturbed, every sort of secret and indirect influence was exercised to render the court contemptible, and its orders nugatory. At last Bakar Saib, unable to

support the dignity of the court, and wearied by the constant repetition of these insults, quitted office in disgust, and never returned.

The second judge, Gulam Mohi ud din Mekri, then took the seals, and being supported by Sidraj Aras (a relative of the Raja, who was entrusted with much of the authority of the government, and enjoyed likewise the confidence of the Resident) he was enabled in some degree to maintain the character, and to enforce the authority of the court. At the end of seven years, nine charges of corruption and partiality were presented against this judge, but after two months investigation before the Resident nothing was proved against him. He then besought the Raja to punish his accusers ; but failing in this, he resigned his office.

The Khazi of the court, Sayad Ali, succeeded, but though acting as Bakshi he did not keep the seals, the decrees being submitted for confirmation to Bala Aras, a maternal uncle of the Raja. One Srinivas Rao was then associated with the Khazi for about 10 months, when the latter died, and Srinivas Rao conducted the affairs of the court alone. He too was dismissed by the intrigues of the Raja's courtiers after some months, and Chota Raja Khan was appointed in his place. During the time of the latter judge, who remained in office about 3 years, the court was in very bad repute. The suitors sought for and obtained their ends by indirect means. The Raja often sent for this judge, abused and called him names in open Darbar, dismissed him from his presence, and summoned a mutsaddi of the court to give him what information he wanted. It is currently believed that every person about the Darbar at that time, however low, used to intermeddle in the suits, and attempt to influence the decisions of the Adalat. At length one Krishna having obtained an unjust decree for a large sum of money, through the influence as it was supposed of the sheristadar of the Resident's cutcherry, the Raja, at the suggestion of Dasappaji, a relative of his own, assembled a panchayat, inquired into the charge, and dismissed the judge.

After which, at the instance of the Raja, Gulam Mohi ud-Din Mekri who had formerly resigned, again consented to act as Bakshi of the Adalat, and remained at the head of the Court until the assumption of the country, when the functions of the Adalat were suspended. And on the establishment of the newly constituted Adalat, or Commissioner's Court, in 1834, he was appointed one of the judges.

Thus, from its first institution by Purnaiya, until the appointment of the Commission, the semblance of an Adalat Court was maintained ;

but it was no uncommon thing, after its decrees were passed, for the Raja to issue a *niríp* dispensing with their observance. It has likewise happened that, in the same suit, as many as four or five contradictory decrees, in addition to the original decree of the court, were successively passed by the Raja himself, just as the influence of the one party or the other predominated at the Darbar; and other circumstances might be adduced in proof of the fact that, at the time of the assumption of the country, nothing remained which was fit to be called the administration of justice.

Besides these irregularities connected with the Court of Adalat, suits to the highest amount were sometimes decided in the Sar Amin's choultry, and even by Raja Khan and Dasappaji when Bakshis of the Barr or Infantry. Questions of property were also decided by the Raja in person, without any record of the investigation, or any written decree.

Criminal Justice.—Under the ancient Hindu rulers of Mysore, the following classification of crimes and forms of procedure are said to have prevailed :— theft; robbery; highway robbery; murder.

Cattle stealers, and robbers of cloths, household furniture and grain, &c., were tried by the shekdars, shanbhogs and gaudas of villages, who were empowered to inflict, on conviction, corporal punishment and imprisonment in the stocks. There was no limitation either to the extent or duration of these punishments, and persons confined on suspicion were seldom released, whether shewn to be implicated or not, until the stolen property was recovered. A report of the circumstance was however made by the village authorities to the Amil.

Primary investigations of highway and gang robberies, and murders, were also made by the village officers, after which the prisoners and witnesses were sent to the Amil, who, assisted by the killedar, examined them, and reported the result of the inquiry, with their opinion, to the Huzur, by whose orders the prisoners were variously punished, by death, imprisonment for life in hill forts, and by mutilation. But records of these trials were never kept, nor does it clearly appear that panchayats were ever employed in criminal cases previous to the government of Purnaiya.

Under the Muhammadan government, no particular alterations were made in the customs which had previously prevailed in the districts. There was a Sadar court at the Huzur; and Muhammadan law was administered to those of that faith according to the Koran.

The forms of criminal procedure and the punishment of crimes which obtained under the administration of Purnaiya have been described in the last section, when an attempt was made to reduce into practice some of the mild principles of jurisprudence advocated by Beccaria. The experiment however failed.

Under the Raja, the fourth court at Mysore undertook the magisterial department, each *hâkim* alternately presiding in it and receiving petitions; that is to say, each *hâkim* was employed for 15 days successively in receiving complaints and preparing them for hearing, and 15 days in presiding at trials. This Court inquired into all assaults, robberies and minor offences, and having presented its finding to the Bakshi of the Sadar Court, sentence was passed by the latter.

The penalty awarded for theft of all descriptions, and serious assaults, was for the most part corporal punishment, and but rarely fines; the former being always inflicted on low caste prisoners, the latter on those of the higher caste. The instrument used for corporal punishment was the *korda*, a most formidable whip, 40 strokes of which, when severely administered, were sufficient to exhaust the frame of the stoutest criminal; nevertheless, instances were very common of prisoners suspected of theft being flogged until they fell, being remanded to prison, and again subjected to the same discipline until they confessed the crime, or named a spot where the property was hidden; the former being necessarily the only resource of such as were really innocent. To carry on these severities there were two regular Jalebdars or floggers borne on the strength of the establishment of the Sadar Court, at a monthly pay of 6 rupees each. Afterwards, when one was reduced, it being found that one individual was inadequate to fulfil the duty required of him, it frequently happened that the floggers attached to the Anche, Shagird pesha and other cutcherries, (all of which were similarly provided) were called in to assist in the magistrate's department. It has been confidently stated by one of the most respectable men employed in the judicial department under the Raja's administration, that no day passed from the time His Highness ascended the throne in 1812 until the appointment of the Commission, on which, when magisterial inquiries into theft and serious assaults took place, the sound of the *korda* was not heard in the Court of Adalat.* In

* It was a favourite instrument with Haider (see p. 270). It was a common trick of his chief choldar, (says Wilks) when his master appeared displeased at some supposed relaxation,—or as he chose to interpret, was in ill temper,—to bring him into good humour by the sound of the *corla* at the gate, and the cries of an innocent sufferer, seized casually in the street for the purpose.

heinous cases the Bakshis were accustomed to report to His Highness the Raja, and receive his orders on the subject. In awarding the amount of punishment, the Mufti was consulted by the Court, and he gave his futwah. But this mode of proceeding did not, as will be afterwards explained, extend to the greater part of offences committed in the taluks; and even with regard to those committed in the town of Mysore, it must be considered rather as the rule than the practice.

The preceding statements refer to the mode of procedure. With regard to the punishment of criminals, there was, under all the rulers of Mysore, from Haider Ali to the Raja, an utter absence of system, so that it was impossible to say what kind of punishment would be inflicted on any particular class of offenders.

For felony,—death by hanging, throwing over precipices, and treading under foot by elephants, confinement for life in hill forts, amputation of hands, feet, noses and ears, flogging, imprisonment in the common jails, confiscation of property, and fines, were indiscriminately resorted to. In one respect, however, the preliminary proceedings were invariably the same; that is, persons suspected of murder or robbery were beaten daily until they confessed the offence, or pointed out where the stolen goods were deposited. Indeed, the recovery of the stolen property was considered (and it is believed the current of native opinion still runs in the same channel) of more importance than the punishment of the offender, and when this was effected the culprit was as commonly released as punished. The usual punishments for petty thieves, revenue defaulters, and fraudulent debtors, were—flogging, imprisonment, fines, exposure on the highway with a stone on the head, thumbscrews, and pincers on the ears; but these inflictions were equally uncertain and variable with the preceding. Petty assaults and abusive language were commonly punished with small fines of from 3 to 12 gold fanams.

To refer more especially to the time of Purnaiya, Major Wilks observes that sentence of death was never pronounced excepting in cases of murder or plunder on the frontier; that theft and robbery were punished with imprisonment and hard labour; that fines were discouraged, as a dangerous instrument in the hands of subordinate authorities; and that corporal punishment was prohibited. This statement is true only of a particular period. Previous to that time, punishment by mutilation of hands, feet, noses and ears was occasionally inflicted by order of Purnaiya; and in the latter years of his government it is well known that

he had recourse to all the severities of former times. At the period of his administration last spoken of, corporal punishment was not only permitted, but enjoined; suspected thieves were flogged by the village officers till they confessed, and if obstinate (or innocent) they were sent to the taluk cutcherry, where they were flogged again. Even the power of inflicting capital punishment was not, as at the time described by Major Wilks, confined to the Divan assisted by the Resident, but was exercised sometimes by the Faujdars, by whom also the crime of murder, when committed by persons of high caste, was either overlooked or not infrequently commuted for short imprisonment or a fine.

Murder, gang and torch robbery attended with violence, when committed by persons of low caste, were usually punished with death. Gang and highway robbery unattended with violence, were punished sometimes with mutilation, but more commonly with imprisonment in hill forts, or hard labour in chains. For thefts or other minor offences, from 10 to 100 lashes, at the discretion of the Amil, were permitted to be inflicted; likewise thumbscrewing, flogging, and imprisonment. Revenue defaulters were subjected to these last, and various other tortures, such as being made to stand on hot earth from which the fire had just been removed.

During the Raja's administration, the punishment of offences was much the same as in Puroaiya's time, perhaps rather increasing in irregularity, until the state of disorder into which the country was at length thrown led to its assumption.

Persons accused of serious offences, especially at the capital, were, as has been already said, tried, according to rule, at the Huzur Adalat; but in practice, the Barr and other cutcherries were likewise not infrequently used as criminal courts. By all these tribunals, and also by the Sar Amin, mutilation of the hands and feet, noses and ears, was inflicted, even for ordinary theft; while corporal punishment, thumb-screws, and ear-pincers, were commonly resorted to for minor offences; women convicted of incontinency were sold as slaves; and, in an order now before me, (writes Sir Mark), a woman is sentenced to lose her nose for that offence. Stripes were inflicted by the local officers without limitation as to number, and were habitually resorted to in order to recover balances of revenue.

The condition and treatment of females was most deplorable during all former administrations, especially under Hindu rulers; and if to live in constant dread of degradation, and exposure to the greatest indignities,

at the accusation of the meanest and most disreputable informers, be considered a state of slavery,—actual sale in the market, which frequently followed, was but the climax of a long course of previous suffering and servitude. It will hardly be credited, that in the large towns there were regular farmers of an item of Government revenue, called *Samayachar*, part of the profits of which arose either from the sale of females accused of incontinency, or fines imposed on them for the same reason. Thus the Government was placed in the position of deriving direct support from the crimes of its subjects, or what is still worse, of sharing with common informers the fruits of their nefarious extortion.

The rules of this system varied according to the caste of the accused. Among Brahmans and Komtis, females were not sold, but expelled from their caste, and branded on the arm as prostitutes; they then paid to the *ijardar* an annual sum as long as they lived, and when they died, all their property became his. Females of other Hindu castes were sold without any compunction by the *ijardar*, unless some relative stepped forward to satisfy his demand. The wives and families of thieves were also commonly taken up and imprisoned with their husbands, notwithstanding that there was no pretence for including them in the charge. These sales were not, as might be supposed, conducted by stealth, nor confined to places remote from general observation; for in the large town of Bangalore itself, under the very eyes of the European inhabitants, a large building was appropriated to the accommodation and sale of these unfortunate women; and so late as the month of July 1833, a distinct proclamation of the Commissioners was necessary to enforce the abolition of this detestable traffic.

The Amils were sometimes confined in irons for corruption, or neglect of duty; or summoned to the *Huzur* and exposed before the palace with their faces covered with mud and with pincers on their ears; they were also occasionally flogged, to the extent of one hundred lashes, or until they gave security for the balances against them; yet such men were not by any means looked upon as disgraced, but were frequently re-appointed to office, and some of the taluk servants now in employ are said to have formerly suffered such inflictions. The natural consequence of this was the extinction of all self respect and honourable feeling amongst the public servants.

Although no sentence of death could be carried into execution at the town of Mysore without the sanction of the Raja, yet, at a distance from

the seat of government, reputed offenders were sometimes executed even without the form of a trial. So late as the year 1825, a native officer of infantry was sent out for the apprehension of some Kormars (a class of people notorious for their predatory habits) accused of robbing a treasure party, and putting to death two men who had been employed to obtain intelligence of their movements. The orders he received were to hang the guilty, and bring in the women and children. Sixty five men were accordingly hanged on the spot, and 200 prisoners brought to Mysore. The same officer was again employed in 1827, and brought in 100 prisoners, of whom 3 were hanged. Of the whole 300 prisoners captured on the two occasions, about 200 were sold in the public bazar of Mysore as slaves, and the rest, without any form of trial, were kept in jail. The native officer was rewarded for his activity with a palankeen and an increase of salary.

Towards the end of the Raja's administration, almost all the powers of government had passed into the hands of his principal officers or his favourites, by whom they were often exercised for purposes of extortion, or revenge. It was well known that notorious criminals were constantly liberated for a bribe, while the innocent were imprisoned; and on the appointment of the Commission, the jails were found to be crowded with supposed offenders of every description, many of whom, it was found on inquiry, had been confined on mere suspicion, or for no assigned reason; while others had been imprisoned for ten years and upwards without ever having been brought to trial.*

In short, both property and personal liberty, and sometimes life itself, were dependent on the mere will and caprice of a class of public officers who were not only quite incapable of executing their duties, and indifferent to the fate of those under their control, but openly and avowedly were subject to the orders of the debauched parasites and prostitutes at court, who notoriously superintended and profited by the sale of every situation under the government the emoluments of which were worth their attention. Nay more, these public officers were themselves not infrequently in league with criminals; and such was the general and deep rooted corruption, that men who could afford to pay, might commit all sorts of crimes with impunity. The capital punishment of an opulent offender was a thing almost unheard of;

* The Raja requested to be allowed to liberate the prisoners in jail before delivering over the government in 1831.

and it was thought to be an act of unparalleled disinterestedness on the part of the Raja, when he was reported, in 1825 or 1826, to have refused the offer of one lac of rupees for the pardon of the supposed leader of a gang which had committed some daring outrages. Combinations existed between public officers and gang robbers for purposes of plunder; and there is too much reason to believe that, even after the assumption of the country, depredations did not wholly cease to be committed under the protection of the public servants.

With respect to the jails, little regard was had to accommodation or management, and there was no classification of prisoners; whether convicted, accused, or only suspected, they were all confined in the same place; and a special order from the Commissioners was necessary to abolish a practice, which had generally obtained, of working them on the high roads *before trial*.

It has appeared necessary to enter into this long recital of the former laws and usages of Mysore, because an impression generally prevails that they were distinguished for extraordinary lenity; whereas, with the exception of a short period during Purnaiya's administration, nothing could exceed the corruption and capricious severity which pervaded the department of justice, as well as all other branches of the administration; and thus it happened that the people, having lost all feeling of self respect, and accustomed to consider punishment more as the sign of the anger and impatience of their rulers than a just and certain consequence of crime, were left in a state of demoralization, and callous indifference to shame.

Police.—Under the Hindu rulers of Mysore, the duties of the Police were conducted by village servants, under the following denominations; and these denominations were continued with little variation under the government of Haïdar Ali, Tipu Sultan, and Purnaiya. These servants were paid either in inam lands, shares of grain from the ryots, or direct from the Sarkar.—*Talvars*, *totis*, *nirgantis*, and *kávalgars*, the usual village servants so called: *kattabidi* peons, watchmen on public pay: *Hale Paiki*, ancient or common peons: *umbli-dars*, holders of inam lands called umbli, it was their duty to provide a constant succession of watchmen, and they were held responsible to protect all property within their limits: *amargars*, holders of inams called amar, which they held for the performance of police duties: *hul-gával*, selected from the 13 castes, they were entrusted with the charge of public treasure: *ankamala*, watchmen

of the Bedar caste: *kalla Kormar*, thieves by profession, and found useful in detecting thieves. Also the patels and shanbhogs. In the time of the Palegars, these watchmen were held responsible for all robberies committed, whether in fields or houses; they traced robbers by the foot-steps, and if unsuccessful, themselves became responsible for all lost public property of moderate amount, but not for private property.

The first blow struck at the power of the patels was in the reign of Kanthirava Narasa Raja in 1654. That prince, attributing the opposition he met with from his subjects to the turbulence of the patels, reduced their inams, and confiscated to his own use a great part of their property. Their allowances were partially restored by Chikka Deva Raja, who ascended the musnud in 1672, and he at the same time regulated the rusums of the other Barabalutis. His son and successor Kanthirava Raja, however, sequestered the shares of the patels, leaving the inams of other village servants as they were.

Under Haidar, the effective state of the police can be much more readily credited, as indeed it can be more easily accounted for; there was then no separation of interests, and no clashing of jurisdictions. His administration was as extensive as it was vigorous, and besides the terror of his name, and the real sagacity of his character, it must be remembered that his immense levies effectually drained the country of all turbulent spirits, or what is much the same, gave them employment congenial to their tastes and a sure means of livelihood. Haidar took no steps to restore to the patels their sequestered allowances; but, by continuing to the other Barabalutis their emoluments and privileges, he ensured their services. The village walls and boundary hedges were kept in repair; and tranquillity was preserved by the presence of his troops, who were everywhere distributed, and by the severity of his punishments whenever it was disturbed.

Under Tippu Sultan, the police, though impaired by the reduction of many of the patels, umblidars and amargars, and by the assessment levied upon their inam lands, was still kept from utter ruin by the presence of his troops under the Asofs, and the dread of his sanguinary disposition. The Sultan's reductions however extended only partially to Nagar, and not at all to Manjarabad, where his authority was never sufficiently established to render such measures practicable; and at one period of his reign he appears to have had some intention of restoring to the patels the inams of which they had been deprived. They were

accordingly summoned to his presence, inquiries were instituted for that purpose, and sannads were actually issued to the taluk cutcherries for delivery to them, but for some reasons which are not known, probably the confusion of the affairs of his kingdom, nothing further was done to replace them in their old position.

Under the administration of Purnaiya, the Kandachars selected from the remains of Tippu's army were employed in the police, and as the country was well guarded from disturbance, by the vigilance of the ruler and the presence of British garrisons, little opportunity was afforded for the perpetration of those crimes which in India are almost an invariable consequence of public disorder. But the ruin of the patels was completed by Purnaiya in the year 1800. Until the period of his government, the patels' inams, though sequestered, were still entered as such in the accounts of the Sivayi jama, or extra revenue ; thus kept separate, it was easy to restore them to their original possessors, who probably still had hopes from the clemency of some future sovereign. Purnaiya, however, at once destroyed such expectations, by including the whole of these allowances under the general revenue of the country. But Purnaiya did more. He reduced many of this class whom Tippu had spared ; and as this final spoliation of the patels was immediately followed by the establishment of 63 charitable feeding houses, the two measures were inseparably connected in the public opinion.

The same state of things continued for some years under the Raja. In the capital, the police authority was aided by the Barr or infantry a large body of which was constantly stationed in the town for that purpose. The police, however, began to decline with the other branches of the administration, and the general prosperity of the country.

The Mysore Commission.

Non-Regulation System, 1831—1855.

On the British assumption, which took place on the 19th of October 1831, the maintenance, as far as possible, of existing native institutions was expressly enjoined. The task which lay before the Commission, therefore, was not to inaugurate a new system of government, but to reform flagrant abuses in the old, to liberate trade and commerce, to secure the people, especially the agricultural classes, in their just rights against

the gross tyranny and shameful extortion of a host of unscrupulous officials in every department, to purify and regulate the administration of justice, and to develop the resources of the country. But the treasury was saddled with heavy debts ; the subsidy and the pay of troops and establishments were in arrears ; hence fiscal regulations and the emancipation of the land revenue were the most urgent measures at first required.

The revenue system followed, as directed by Lord William Bentinck, was the ryotwari, which appeared to be the only one adapted to the wants and traditions of the people of Mysore. It was brought back as far as possible to the state in which it was left by Purnaiya, but liberalized in all its details and vigilantly superintended in its working, with higher views however than the mere swelling of a balance sheet, as was too much the case with that celebrated administrator. The money rents were lowered in all cases where the authorities were satisfied that they were fixed at too high a rate ; and the payments were made as easy as possible to the ryots, by abandoning the system of exacting the khist before the crops were gathered, and receiving it instead in five instalments, payable at periods fixed in the first instance by the ryots themselves with reference to the times of harvest. This had the effect of saving them from the grasp of the village usurers, and they were also freed from the harassing periodical inspection of their crops, and other vexatious interferences with their cultivation. These changes were highly appreciated by the ryots themselves, but were distasteful in the extreme to the money lenders and lower class of public servants.

In cases where the batayi system or that of an equal division of the crop between the Government and the husbandman was found to be in force, every effort consistent with the prescriptive right of the cultivators was made to convert it into a money payment, and where it still prevailed it was purified of its most vexatious characteristics. All the preliminary authorized pilferings of the village servants were put an end to ; the grain was divided in the most public manner ; the choice of shares was left with the ryot, and the whole of the straw,—in a cattle-breeding country a very valuable portion of the crop—became his own property. The result of these arrangements was, that the revenue was collected without the least difficulty ; that applications for takkâvi (money advances from Government) became less numerous every day ; and outstanding balances were all but unknown.

The following are detailed accounts of the revenue and judicial sys-

tems in force during this period, and of the reformation of the sayar ; compiled from a General Memorandum on Mysore, written in 1854.

Land Revenue.—It does not appear that a revenue survey of the lands in Mysore was ever made prior to the capture of Seringapatam, but one of the first steps adopted after that event by the Divan Purnaiya was a general Paimáyish or measurement of fields. The execution of this work, however, was incomplete and irregular, and the records of the measurement were not forthcoming in many of the taluks. Under the new administration, no attempt at a general survey had as yet been made. Assuming, however, Colonel Mackenzie's estimate of a superficial area of 27,000 square miles to be correct, the number of khandagas or khandis would be 1,306,800 : of these, 957,254 were calculated to be covered by mountains, rivers, nullahs, tanks, roads, and wastes ; leaving 369,546 of cultivable land, of which about 284,276 khandis were under the plough.*

The lands in every village were classed as *kushiki* or dry, *tari* or wet, and *bágáyat* or garden. They were divided into khandagas (or khandis), kolagas (or kudus), ballas, seers and poilis ; these being the names for the measures or weights of seed required to sow a given space. But, as these measures varied in each different locality, they were set aside by Purnaiya, and a uniform measure, called the Krishnaraj khandi, established in their room. This khandi, which was fixed at 160 seers, was the standard followed by the European Superintendents in their revenue settlements.

Each village had its *Beriz*, its *Chedsal Jamabandi*, and the *Sthal shist* or *Rivaz*. The beriz was the amount of revenue fixed in ancient times to be drawn from the village. The chedsal jamabandi was the maximum amount derivable at some former period from the village ; and the rivaz was the ancient rate of assessment on each particular field. The number and extent of each field and each particular of its assessment were registered in the accounts of the shanbhogs, but these books had been greatly tampered with at various periods, and had to be looked upon with great suspicion where they did not stand the test of actual measurement. Every field had its own particular name and its boundaries were carefully marked.

* This estimate corresponds with a total area of 17,280,000 acres ; 12,186,567 being unculturable, and 5,093,433 culturable, with 3,965,896 cultivate. The estimated figures in 1875 are, a total area of 27,077½ square miles or 17,329,600 acres, of which it appears that 8,923,579 are unculturable and 8,406,021 culturable : 5,585,015 of the latter being given out for cultivation, and 4,231,826 actually cultivated.

Each village in Mysore, as in other parts of India, had its own agricultural corporation. This establishment, which was called Barabaluti in Mahratti, and Ayangadi in the language of the country, was composed as already described. (p. 472-4).

The patel or gauda was the head man of the village, and his office was hereditary. He had police authority to a certain limited extent ; he settled caste disputes among the ryots, sometimes with, but generally without, the aid of a panchayat, and he was the usual channel of communication between the Government and the village community. In some villages there were government lands assigned to the patels for their support and in others there were none. So also in particular districts there were patels of great consideration and influence, while in others they could hardly be said to rise above the mass of cultivators. The former was generally observable in places remote from the seat of government or difficult of access from other causes.

The shanbhog was the registrar or accountant, and in some cases of more villages than one. With hardly an exception, they were of the Brahman caste, and the office was hereditary. In some places they were in the possession of lands rent free, in others they enjoyed them on a jodi or light assessment ; and in some few places they had a fixed money allowance. In all instances there were certain fixed fees payable to them in money or in kind by the ryots.

The totis were the responsible watchmen of the village and its crops. They were likewise required to act as guides to government officers, and travellers of any importance, and in the absence of the talari had to perform the duties of that official in addition to their own. They were remunerated by lands held free of rent, or on a light assessment. In all disputes about boundaries of villages or fields, the evidence of the toti was looked to as most essential.

The talari was the scout of the village. He traced robbers and thieves watched the movements of suspicious strangers, and was in fact the police peon to the magistrate patel. He was remunerated by rent free or jodi lands. In certain villages there were no talaris, and in these cases his duties were performed by the toti.

The nirganti regulated the supply of irrigating water to the wet lands of the village, whether belonging to the ryots or to the Sarkar. He had to economize the supply of water in every possible way, and in the season of rains might be said to hold the safety valves of the tanks and other reservoirs in his hands. Many a day's supply of water was sometimes lost by the timidity or apathy of an inefficient nirganti, and on the other hand many a valuable dam was carried away by the rashness or ignorance of a presumptuous one.

The remainder of the Barabaluti, with a few rare exceptions, were dependent for their support on the fees paid to them by the ryots for the exercise of their crafts, and on what they might earn from travellers.

There were many villages in which the full complement of the Barabaluti was not to be found, the duties and functions of one member being doubled up with those of another. In some others again, the number of the complement was much extended, and we find included among them in the accounts—the schoolmaster who taught the children, most likely in the exact same manner and on the selfsame spot that his ancestor taught their ancestors twenty centuries ago; the calendar Brahman who calculated their innumerable festivals and anniversaries; and the pujári who propitiated and worshipped the village idol. It was very seldom that these individuals derived any support from Government, but the ryots of course were glad to assist them in the same way as they did the handicraftsmen.

Should any of these village servants who enjoyed government lands, or were in the receipt of a money allowance, misconduct themselves and be dismissed from their appointments, they were invariably succeeded, unless the crime were flagrant, by some member of their own family. In cases where there were two or more claimants for the same office, as for instance in an undivided Hindu family, they were allowed to select from among themselves the individual whom they considered fittest for the post, and it was his name alone that appeared in the Sarkar accounts. In some instances they preferred to exercise the duties in rotation, and where this was found to work harmoniously the authorities never interfered. The civil courts could take no cognizance of disputes for the right of succession to these offices, or for shares in the lands and immunities attached to them. All such were decided summarily by the Amildar, Superintendent, and Commissioner in their Revenue capacities. The alienation, mortgage, or transfer in any way of these lands was strictly prohibited.

In 1850—1, it was calculated that there were 50,709 persons borne on the accounts as Barabaluti, who among them enjoyed land to the annual value of K. pagodas 40,178 and received a money allowance of 10,531; being together K. pagodas 50,709 (Rs. 1,47,517).

The following is a description of the duties of the several Revenue Officers, and of the principles observed in the Revenue Settlement.

The mungári or first rains commence about the middle of April, and continue at intervals till the middle or end of June, by which time the fields are ready to be sown. At this period the tanks should contain two months, or even more, of the supply of water requisite for the culti-

vation of the rice lands. Some time before the beginning of the official year, which was the 1st of July, the *shanbhog* of the village assembled the ryots, and inquired into the circumstances and plans of each individual. After which he concluded the arrangement with them for the *kandayam* and *batayi* lands they were to cultivate, and for the revenue payable by each during the ensuing year.

It will thus be seen that the *shanbhog* was the primary agent in every arrangement between the ryot and the Sarkar. It was through him that the revenue administration of his village was conducted, and it was to him, and to his books, that the ryot and the Government must alike look for the record of their respective rights. He kept a register of all the cultivators in the village, and took an account of the lands of such persons as had died, deserted or become insolvent, and used his best endeavours to induce others to cultivate in their room. He had also to prepare a general annual account of all the *kandayam* lands, setting forth both the cultivated and uncultivated portions, and the reasons why the latter had not been tilled.

In the Chitaldroog and Ashtagram Divisions, the collections commenced in November ; in Bangalore, in December ; and in Nagar, in January. Between these times and June, when the official year closed, the ryot was required to pay to the *shanbhog* the five instalments into which his *khist* had been divided. As each of these instalments was collected from the village, the *shanbhog* proceeded with it to the taluk *cutcherry* and paid over the money to the *Amildar*.

The *shanbhog* was also required to keep a detailed account of demand, collection and balance of every individual in the village ; and when the crops of the lands cultivated under *batayi* tenure were reaped and piled into heaps, he had to make arrangements for their security ; and, on receiving the orders of the *Amildars*, to see that they were threshed, and the grain properly stored, till the time arrived for its division.

At the season of cultivation, the *shekdar* made a tour of the villages in his circle, and advised and directed the *shanbhogs* in their arrangements. In the case of lands under tanks, he ascertained the portions which were to be under sugar cane and under rice, and should the supply of water be insufficient to bring the whole of the Sarkar lands under full wet cultivation, he arranged for the production of the most remunerative dry crop on the portion which would remain wholly or

partially unirrigated. When the Amildar visited the hobli, the shekdar was his main assistant in settling the jamabandi. He had to rely upon him for the information which would enable him to form a true judgment of the state and resources of the hobli, to bring concealed cultivation to light, and to expose collusive arrangements with the ryots and other frauds of the shanbhogs. When the crops under amani or Sarkar management were matured, the shekdar had to see that the shanbhogs took the proper steps for reaping and threshing and storing them, and was held responsible for keeping the shanbhogs and other village authorities of his hobli up to the proper mark of vigilance and honesty in all these respects. Whenever there was a public market within the limits of the hobli, the shekdar was required to prepare regular prices current of the rates fetched on each day, and forward them to the Amildar. He had also to secure all unclaimed property found in the villages, and send it up with full particulars to the same authority.

What the shekdar was to the shanbhogs of his hobli, the Amildar in his revenue capacity was to the shekdars of his taluk. Every dispute was referred to him, and whenever they related to kandayam lands, he had the power of deciding them summarily, subject of course to an appeal to the Superintendent and the Commissioner, whom also he addressed direct if any extraordinary occurrence took place in his taluk.

The Amildar made a tour of the hoblis in the month of September, to ascertain the condition of the inhabitants and the prospects of the season, and to see that the shanbhogs and shekdars were exerting themselves to bring the lands into cultivation. After having satisfied himself on these points by personal observation, and looked narrowly into all the other arrangements entered into by his subordinates, he settled the *kulvar jamabandi*, village by village, and furnished regular ten days reports of the progress he had made. The whole of his settlements were finished in November.

The Sarkar batayi lands of the Vaisakha fasal or May crop, were brought fully under cultivation in October and November, and by February or March the Amildar was able to forward to the Superintendent an estimate of its probable out-turn. The crops were threshed and heaped in May or June, and the Amildar had then to see to the disposal of the Sarkar share. Sometimes they were put up to public auction as they stood upon the fields uncut, but generally after they were reaped and threshed. Should the sums bid be considered

inadequate, the grain was stored in the government granaries till prices became more favourable. Exactly the same course was pursued with the Kártik or November crop, which was planted in the mungari or first rains, and reaped in October or November.

One important duty of the Amildar was to inspect the bunds of the tanks and the embankments of the water courses in his taluk, and keep the Superintendent constantly informed of their condition.

The duties of the *Superintendent*, who was at once Collector, Magistrate and Judge, were laborious in the extreme, and could only be carried on by a man of a very clear head, active habits, and great powers of mental and bodily endurance.

The Superintendent generally proceeded on his jamabandi circuit as soon after the month of November as was practicable : that is, as soon as the Amildars had concluded their settlement of the taluks. The pattas, which had been previously prepared, of each cultivator's holding, according to the Amildar's settlements, were then distributed to the ryots. The patta contained a description of the land held by the ryot, and the amount of assessment to be paid by him on each different plot of land ; as well as any other tax which he might have to pay. This was read over to each man as he was called up to receive his patta, and he was asked if it was correct. Thus any discrepancy or false entry was instantly brought to notice, and the matter was inquired into, the error being rectified, or the doubts of the ryot satisfied, on the spot, and in the presence of all the other ryots of the village. Thus each cultivator not only had an account direct with the Sarkar, but he was brought face to face with the European Superintendent for the purpose of assuring the latter that his account was correct. In this patta were entered the khists or instalments of the ryot as they were paid by him.

Ordinarily, after the pattas had been thus distributed by the Superintendent in person in one year, the Amildars of those taluks were instructed to distribute them for one or two intervening years, and only such ryots as had objections to make in regard to the assessment claims against them, or who were applicants for remissions, were invited to assemble at the Superintendent's circuit camp.

This system of distributing the pattas was a very salutary one ; it brought every tax payer, however trifling his amount might be, in personal contact with the Superintendent ; and as all were obliged to be present to receive their pattas, an opportunity was thus offered to every one to

seek redress for any grievance which he might not otherwise have had inclination or courage to bring forward. This circumstance in itself was a check to oppression, and constituted perhaps the chief advantage of the Ryotwar system, which strictly prevailed in Mysore.

It was on these occasions of distributing the pattas that the subject of remissions was taken up and inquired into; the Superintendent keeping this entirely in his own hands. There was no strict principle laid down upon which remissions were made; each individual case was taken up and decided on its own merits, the condition and means of the applicant being the ruling causes. But generally speaking, the assessment was not levied on land which had not been turned up by the plough, or purposely kept fallow for pasture, whenever it could be shewn that the ryot had not the means of cultivating it that year. The truth or otherwise of such representations was readily ascertained, for all the cultivators of the village were present to refer to; and the applicants for such remissions were generally of the poorer classes. The Superintendent decided upon the question at once, and every body saw that it was an act of his own, and not of any bribe-expecting mediator.

The consequences of such summary decision of remissions were; first, a check upon unreasonable or false applications for such remissions, because no corrupt trade was made in them: and secondly, that there were no outstanding balances (or very small ones) in the collections at the end of the year, because those who could not possibly pay up the full demand had been relieved of that difficulty.

On these jamabandi circuits, the Superintendent caused an examination to be made of the village accounts as kept by the shanbhogs; which again were compared with those (and the abstracts made from them) which were kept in the taluk cutcherries. The extent of batayi lands cultivated was compared with that of former years, relatively also to the current season and quantity of rain which had fallen. The amount value of the produce of those lands was also compared with that of former years relatively to the concurrent rates of prices. The changes in the holdings of kandayam lands were closely scrutinized; and concealed cultivation sought out and brought to account.

The Superintendent confirmed or modified tenders made to the Amildars for leases varying from one to five years; as well as the terms upon which new land was taken upon kandayam. Leases for five years were usually granted upon a fair advance, on the average of the previous five

years produce being tendered. As a general rule, such leases of villages were only given to respectable landholders of that same village. New lands were granted upon the average rivaz or rate of the village, at a progressive rate, generally of three years ; $\frac{1}{3}$ for the first year, $\frac{2}{3}$ for the second, and the full rate for the third : if much expense and labour were to be incurred in clearing, the progressive rate was extended to four or even more years, nothing being charged for the first year.

On these circuits it was expected that all disputes of whatever description referable to the Superintendent would be finally decided : and ten days before the Superintendent arrived at a taluk, a proclamation was published in that taluk informing the people that the Superintendent's cutcherry would arrive there on such a day, and remain so many days : and inviting all persons having any complaints or representations to make, to present themselves before him within that period ; and declaring that should they omit to do so their complaints would not be attended to afterwards, unless good reason could be shewn for their default.

A very important part of his duty was to inspect the works of irrigation in his Division ; to see if the new works had been efficiently constructed, and the repairs properly executed, and to devise remedies for defective works. He had also to look after the roads in his Division ; in short he was expected to see with his own eyes as much of everything as possible.

Nagar.—Of the institutions of the Nagar country, which were somewhat different from those of other parts, Mr. Stokes, under date 1834, gives an interesting account, from which the following extracts are taken.

In the Malnad, villages were almost unknown. The owner of each estate had a large house on some eligible part of it ; and his tenants, labourers and slaves resided on their respective allotments. Each village in the open country had its community, composed of gauda ; talwar or watchman ; madiga, baraki or kulavadi, whose office seems to be the same with that of the toti, a term not used here ; shanbhog or accountant, whose charge, however, in Nagar generally included several villages, or a whole mágani ; kaiwáḍadavaru or handicraftsmen, including the badagi or carpenter, kammar or smith, agasa or washerman, and hajam or barber ; the ayya or Jangam priest, who performed the requisite ceremonies for the Lingavant ryots, and was sometimes also a school-master ; and the pujari who officiated in the village temple. There was

also in every village an influential and generally rather old ryot, known by the title of *Hiriya Rayta* 'the chief ryot', or *Buddhivanta* 'the wise man', who was consulted on all occasions, and was usually the spokesman when any representation had to be made to the superior authorities. In the Malnad, two or three leading ryots or *Heggades* in each *nágani*, acted in behalf of the ryots of their *shime* or district, in all transactions of a common interest, such as arranging sales of areca nut with the merchants, and the details of the settlement and collection with the Sarkar officers; and engagements signed by them were held to be binding on those ryots. There were also in every taluk a few leading men called *Mukhyastar*, generally landholders, who took an active share in public proceedings, and were nearly always with the *Amildar*. They exercised an important influence on the management of the taluk, which was frequently directed to their own private profit, by combining with the Sarkar servants to defraud the Government; but was also sometimes beneficial in checking oppression, and protecting the interest of the ryots.

The *Gaudas* of villages and the *Pete Shettis* had a great many rights and privileges, called *mána mariyáde*, of which they were exceedingly tenacious; one not the least valued by them was the right of precedence, exercised chiefly in receiving *támúla* or betel in public assemblies in the order established by custom, any deviation from which would be stoutly resisted as a grievous insult. The *Pete Shetti* or headman and the tradesmen (*vartakaru*) of the trading towns, who were generally *Banajigar*, were always treated with great respect. The *Shettaru*, as he was called in the plural number, had commonly a *mánya* or privilege of passing one or more bullock loads of goods, daily, free of custom duties. He also levied *pasigi*, which was a small quantity taken in kind from all produce brought for sale to his market. The *Shetti Vartakaru* constituted a sort of court of arbitration, which was the favourite tribunal of all the trading community and of many others.

Slavery, chiefly however in the agrarian form, existed from time immemorial, and to a great extent, in the Malnad. It was unknown in Kadur, Tarikere, Chennagiri, Harihar and Honnali; and was rare in the intermediate taluks. The population return shewed in the five Malnad taluks, 4,169 houses containing 9,973 persons of the *Holayar* caste: and it is computed that the whole of these were properly slaves, though many had now escaped from the authority of their original masters. Slaves were of two descriptions—*honn-ál* (from hon, gold) and *mann-ál* (from man,

earth) of which the former might, and the latter might not, be transferred from the soil to which they were attached. The term by which slaves were designated, *āl*, did not in its original signification imply any notion of servitude. It merely meant a person (man or woman), and was applied equally to hired servants, or daily labourers. Certain limits, termed *mettu*, steps, were fixed, which the slave must not pass without permission, on pain of being considered a fugitive. When a slave ran away, his master searched for him, and if successful applied to the Amildar of the taluk to compel his return. The Native Government professed to comply with such applications, but the interference of the Amildars was now prohibited. Masters had been considered to possess the right of punishing idle or refractory slaves by beating; no express order was given on this point, but the power is supposed to have been abrogated by the police regulations. The Malnad landholders frequently complained of this alleged departure from the custom of the country, but it is clear that slavery had been gradually losing the support of the Government from the beginning of the present century, and it was generally found, on inquiry, that slaves whose return it was requested should be compelled, had left their masters fifteen or twenty years.

The usual maintenance (*palḷi*) of slaves in the Malnad was 1 kolaga or 6 siddi of batta or rice in the husk, equivalent to a pakka seer of rice, for each man, and 5 siddis for each woman, per diem; which was doubled on the new and full moons and sometimes at the feasts. An annual supply of clothes, consisting of one kambli valued at half a rupee, to each man and woman; one dhoti or waistband worth half a fanam, one panche or coarse cloth five cubits long and costing about two annas, and one rumal costing $\frac{1}{4}$ of a rupee, for each man; one shīre or cloth 10 cubits long and costing a rupee for each woman. On the occasion of marriages, the master of the man had to purchase a wife for him, usually for 3 or 4 B. pagodas, from her owner; unless, which was most commonly done, he could give the daughter of one of his slaves in return. This practice was called *sattai* or barter. The expenses of the marriage were borne by the master of the husband, and commonly amounted to six rupees and three khandaga or 150 seers of rice; the children belonged to the owner of the man. When a slave with the permission of his master worked for another person, that person must supply him with food and clothing as above stated, and must besides pay a small annual sum, generally half a B. pagoda to the master—this

was called *hegal báṭṭige*, shoulder hire. The ordinary price of a pair of slaves, man and woman, called *guḷi saraku* (*gudi*, a Holeyar's habitation ; *saraku*, goods or stock of any kind) was 12 B. pagodas, and with a pair of bullocks they were supposed to be sufficient for cultivating five *khandaga* of land.

These slaves, though degraded, are much better off (says Mr. Stokes) than those in Malabar ; they are in general stout and healthy in appearance, and shew no signs of being either overworked, or under-fed. They are rapidly approximating to the state of the better class of agricultural labourers. The Ikkeri princes possessed a great many slaves, acquired by conquest or otherwise ; some of whom were employed in the palace garden at Nagar, and others in keeping in repair the forts of Lakvalli, Kavaledroog, &c. They were all retained by Haidar and his successors, until the end of 1834. The establishment was a source of great abuse, but the slaves considered its abolition rather in the light of dismissal than emancipation. Besides the Holeyar, there are a few slaves born of women who have lost caste, or who in infancy have been sold by their parents.

As regards the tenure of land in Nagar, the people were accustomed to consider all land to belong to the Sarkar, unless specially alienated ; but admitted the right of sale or mortgage in gardens. In the Malnad it is clear this right existed in rice lands also. It appears from old sannads that the price of the land, as well as a *nazar*, was paid to the Sarkar by persons who founded *agráhāras*. A ryot's land could not without his written consent be permanently transferred to another. Both rice lands and gardens were cultivated by tenants of the proprietor, on rent called *gadi* or *guttiga*, generally in kind, with a small payment in cash. The registered landholders paid the assessment direct to the *shekdar* and *shanbhog*, and there was no *umbali* or village establishment. Some ryots held the whole or parts of several villages. The *shanbhog* in this case kept an account in the name of each ryot. This was called *kulavar grámvar*, instead of keeping an account for each village or *grámvar kulavar*.

In the eastern taluks, no land was saleable but garden or *umbali* and *uttára* land. *Gaudas* sold their *gaudike*, but this merely included the usufruct of the *umbali*, and other emoluments and privileges attached to the office, but not the land of the village. The usual price in Shimoga was three years purchase of the *umbali shist*. In Chikmagalur and Vas-

tara were ryots called kulagars, who claimed peculiar rights, amounting nearly to absolute property, on the land of their villages ; and there were almost in all villages some ryots whose tenure seemed to be of longer standing and more respected than others. In Haramkatte, Ajimpur and Yegati, there were traces of a tenure by shares, called *chigar vantige*, in which the whole village was parcelled out into lots of equal value, containing a due proportion of rice, garden, and dry land. There were, also traces of a similar apportionment in the form of a ryot, of a black, red, and sandy soil, and near, distant and middle fields, which he was not allowed to separate. In all these taluks the settlement had been made by villages. Where there was land assigned to the office, the old gaudas generally retained the management of their villages, elsewhere they were displaced by temporary renters. They controlled all arrangements for cultivation, and occasionally took land from a ryot against his consent, though they had no recognised right to do so, unless he left it uncultivated, in which case it was transferred without ceremony to a new occupant, whose tenure was the same as his predecessors. Great impediments were placed in the way of a ryot throwing up land, or migrating to a new village. The settlement was now made with each ryot, and all restrictions regarding the occupation of land abolished. In these taluks land was seldom cultivated by tenants, except on the terms of an equal division of the crop, the tenant providing seed and stock.

On a few lands the old money assessment had been commuted since 1800 for a payment in grain, for the ostensible purpose of supplying some fort or chatra. But the disposal of this grain was liable to great abuse, and the original money payments were therefore restored. The batáyi settlement was now abolished everywhere except in Kadur, and the beds of tanks occasionally cultivated.

The shist, with the additions of dasoha, pagudi and patti (described p. 488), was further increased 12 as. per pagoda by Haidar in the year after he took Bednur, in lieu of the shanbhogs' per centage at $\frac{1}{2}$ fanam per pagoda called *varlane*, of a private fee paid to them called *kattu aswari*, and of service and supplies required from the ryots for certain forts ; but the amount of this last item varied in different places according to the usage.

Sivappa Nayak's revision seems to have extended to the five Malnad taluks, Sorab, Shikarpur and Shimoga, but not to Honnali and

Tarikere, though the distinction into shist and patti was made there. In the Malnad, the above shist and patti, had generally continued the limit of the assessment till the present time. In the gauda guttige villages from Sorab eastward, the gaudas paid generally the full shist and patti on the whole village, but let some land to ryots at the shist alone, which was called kattugadi; some at the shist and 50 per cent patti; and some at double the shist. About the year 1805—6 the difference on all fields let for more than the authorized patti, was collected in account of government and added to the beriz of the village. Till 1832—3 the shanbhogs registered the shist only of each field, and the same field was sometimes let as kattugadi, sometimes at 5 fanams patti, and sometimes at pagoda patti, according to the pleasure of the gauda. They were now required to fix the patti as well as the shist on each field, taking it at the highest rate recently paid on that field.

Manjarabad.—For the Manjarabad country, part of the old province of Balam, similar details are given by Major Montgomery, under date 1839.

The form of village government in the taluks of Manjarabad, Belur and Maharajdroog, was essentially the same as in other parts of the country, but the constitution of society in the Malnad hoblis differed from that of the plains, in the general absence of Brahmanical influence, and a more marked difference between the upper and lower classes; the whole population being as it were divided into two distinct grades, the Patrician and Plebeian; it might perhaps be said, the free-men and slaves. The former consisted of Patels and ryots of the Lingayat, Hale wakkal, Devar makkal, Malari, &c., castes: the latter of the Dhers and Bedars. But the patrician class may be again divided. There were the patels of náds, who were exclusively of the Lingayat or the Hale wakkal játi; the patels of the mandes, and gráma patels, these were all of the Devar makkal játi, the Halepaika of Canara.

Ugghalli Devappa Gauda, a Lingayat, was the patel of Malavana nad, consisting of five mandes, rated at 1,000 pagodas each. He was universally acknowledged to be the senior patel of the Manjarabad taluk, and as such, was treated by the others with the greatest respect. He was called the Shime Gauda. Nanja Gauda, however, the patel of the Kittal nad of Belur, was descended from a senior branch of the family, and his ancestors, previous to the dismemberment of the province of Balam, when Belur became a part of Mysore, were admitted to be the Moktesar Patels. When therefore Manjarabad, as well as

Belur, became a portion of Mysore, it was very difficult to settle who should have precedence when these two met at the annual jâtres at Halebid and Devavrinda, and much jealousy existed. However sometime ago they wisely thought it better to compromise the matter. The families intermarried; Nanja Gauda agreed to refrain from appearing in future at the jâtre of Devavrinda, and Devappa Gauda, on his part, did not appear at Halebid until after Nanja Gauda had paid his devotion. The second in consequence amongst the patels, was Manali Viro Gauda, also a Lingayat, of Kibbat and Balam, which together form four mandes, rated formerly at 1,000 pagodas each. The third was Hettur Dodde Gauda (of the Hale wakkal jati) of Hettege nad, consisting of three mandes, rated formerly at 1,000 pagodas each. The fourth was Kalur Vire Gauda (Hale wakkal) of Molkun nad, consisting of three mandes rated as the last. The fifth was Godera Komari Gauda, (Hale wakkal) of Bisale and Huchchangi, consisting of the same number of mandes, and rated the same as the two last. The sixth and last was Mudigere Sidde Gauda, a Lingayat of Mudigere nad, which consists but of one mande, rated at 1,000 pagodas. The Nad Patels were also patels of the mandes in which they reside. To the other mandes there were separate patels.

The whole of the duties of the internal government appear formerly to have been conducted through the agency of these Patels, and they undoubtedly enjoyed very large inams. The patels seem in fact to have been feudal chiefs; they did not, it is said, wage aggressive warfare beyond their own boundaries, but an inspection of their habitations, even now, shews that they cultivated the art of military defence. The houses of all are fortifications, in some instances surrounded by a broad and deep wet ditch, the only passage across which is defended by a strong gateway, looped for musketry and matchlocks.

Of the power of the Patels in former days, it is of course impossible to obtain an accurate account. But it may be supposed to have varied with the character of the reigning Palegars, and the Superior Government. They are said, however, at times to have exercised a despotic sway, extending over the lives of those under them. During a part of the reign of the Raja even, and the more vigorous administration of Purnaiya, it was not, it is said, uncommon for them to assemble their clansmen and servants, and openly resist the public authorities when they appeared at their villages to ask for the Sarkar dues. Their resistance on these occasions was frequently successful, and led to a compromise of the demand.

Their ostensible power was now confined to assembling the ryots

for the chase, to assisting the shekdars to carry into effect the orders of the Amildar relative to the cultivation, to arbitrating in petty disputes, whether relative to land or otherwise, and the legitimate weight which their advice and opinion must have in all matters relative to the internal management of the taluk. It could not, however, be doubted that the generality of the ryots would blindly obey their orders in almost all cases, whether opposed to, or in accordance with, the wishes of the Government. Their privileges were now confined to the collection of a fee of one fanam, termed *arati kinika*, paid to the village patel on every occasion of marriage in his village, and to the precedence accorded to them at all feasts, which is principally displayed in the distribution of betel. The nad patels are helped first according to their rank, and then follows the distribution in succession to the others. In cases of disputed precedence, the distributor crosses his arms, and offers to the different claimants at once. The patels had now no acknowledged umblis, the whole having been resumed by Purnaiya, but there is no doubt that they possessed the best lands, and managed to keep them assessed much under their real value. The ryots of the higher castes who were not patels, and happened (which was very seldom) not to be related to any of them, still acknowledged their superiority, and yielded them obedience.

The Dhers, Bedars and others, who have been classed as the Plebeian population were almost universally the servants or slaves of the Patrician classes, and but little difference existed between the free servant and the slave. The latter were termed Hale makkalu or old sons. They were fed from their master's table. They were clothed by him. They were married at his expense. They were feasted and received presents at his festivals. They mourned as members of the family, when deaths occurred in it. They performed all menial offices, whether domestic or agricultural. They were sometimes (but apparently not necessarily) disposed of with the family estate. If purchased separately, they were liable to be resold, but the sale of slaves separately from the land was never, it appears, of very frequent occurrence.

Slavery now ceased to exist, inasmuch as no interference on the part of the Government servants to compel a slave to serve his master was permitted, and any complaint of a slave against his master was investigated and decided as if both parties were equally independent. But at no period, would it appear (as far as can be ascertained) that slavery in Balam was invested with the more revolting features so com-

mon to it in Africa and America. The sway of the master seems generally to have partaken more of a paternal character than the terms 'owner and slave' would indicate, and frequently as it had been inquired of those who still considered themselves bondsmen, whether they would not wish to change their lot, never yet was met one who acknowledged that he repined at it. Probably there had not for many years been any very great difference in the condition of the slave and free labourer ; the latter being generally paid with food and clothing of nearly the same quality afforded to the former. Nor was it the custom for the free labourer any more than the slave to employ his children with any other than his own master, unless the master should have given his consent, and in cases where the marriage expenses of the free labourer had been defrayed by the master, he could not leave his service till the amount was refunded.

The people considered a proprietary right in the land to have been conveyed by the rulers of Vijayanagar, to the different families of emigrants who located shortly after the subversion of the Halebid dynasty in 1326. The existing gaudas and ryots who claimed to be páldars or shareholders of the different villages, professed to be the descendants of these emigrants, and declared that their right to the land had never been disputed, and was strictly respected, till the appointment of Amildars by Purnaiya and the Raja, since which time, many old proprietors had been forcibly dispossessed of their lands, which had been rented to others.

Sales of páluvantige land do not seem to have been frequent, but the right to sell and mortgage it was universally admitted. The deeds of sale assimilated with those used in Mysore, more than those existing in Canara. The kraya patra, which included in the transfer, house, land, back-yard, dung-heap, and kulvadi,* was the most perfect conveyance that could be made, and it was considered to alienate all village rights in perpetuity, as well as the land. A patel selling his land, but retaining his house, back-yard and dung heap, retained with them his village rights and precedence. This land was generally considered recoverable by his heirs, at however remote a period, on their repaying its price ; provided always that they had retained possession of the house and back-yard.

Sayar.—At the time of the assumption of the country, the sayar was

* It would appear by this, that the kulvadi was formerly considered the slave of the proprietor of the land.

found to be mostly farmed out, and it was next to impossible to ascertain the extent of its resources, the number and the nature of the strangely miscellaneous articles it included, or how far it was susceptible of improvement. The accounts of the Sarkar gave the nominal, not the real, settlements, and those furnished by the contractors themselves were of course not to be relied on. As immediate reform thus became impracticable without risk of serious error, the only thing to be done was to watch the renters narrowly, and to set about collecting the required information in every possible way. In addition to this, the revenues of the State were in a most reduced condition, with a heavy load of arrears of uncertain amount to be cleared off, and it was considered better, therefore, in every branch of the administration, to proceed gradually and with caution, grappling with the most glaring grievances, and correcting the others one after another as the state of the finances improved, and acquaintance with the real state of the country advanced.

In this way many duties were allowed for a time to remain, which can be justified by no abstract principles of political economy, but which the state of commerce and other local circumstances rendered it advisable to retain, for a time at least if not permanently. The rules, however, under which these were levied were purged of all ambiguity, and being expressed in the simplest terms, were intelligible to the meanest trader; and the sayar may very early be said to have been collected without a wrangle. But down to the year 1854 no less than 769 items of Sayar taxation were gradually swept away, amounting in the aggregate to the annual value of 10½ lakhs of rupees.*

Bearing heavily as these taxes must have done, it may safely be assumed that they were not so much detested by the people on account of the money they took from their pockets, as on account of the iniquitous use which was made by the izardars and their myrmidons of the police powers with which it was a necessary part of the system to invest them. What these police powers must have been, and of the generally vexatious nature of the taxes, an idea may be best formed by the selection of a few specimens.

In certain places and in particular castes, taxes were levied on marriage, on taking a concubine, and on incontinency; on a female of the family

* The following are the particulars:—

No.	Head.	Amount.	No.	Head.	Amount.
42	Revenue	Rs. 1,57,758	187	Chillar Bab	Rs. 79,988
482	Sayar	8,24,525	18	Mohatarfa	4,165
39	Abkari	7,259	1	Amrayi	78

attaining puberty; on a child being born, on its being given a name, and on its head being shaved; on the death of a member of the household, and on the subsequent purification ceremonies. Umbrellas were taxed, and so were individuals who passed a particular spot in Nagar without keeping their arms close to their sides. There was one village whose inhabitants had to pay a tax because their ancestors had failed to find the stray horse of an ancient palegar; and there was a caste of Sudras who were mulcted for the privilege of cutting off the first joint of one of their fingers in sacrifice. Fees were levied from bankrupt Government contractors for permission to beg (it is not stated what classes were likely to bestow alms upon them); and taxes were demanded from individuals who went to live in new houses, or who listened to the reading of the new year's calendar. To this may be added the fact, that the daring climbers who robbed the nests of the myriads of wild pigeons that build against the perpendicular sides of the vast ravine into which the Gersoppa river precipitates itself, were made to pay a percentage on the grain which they thus collected at the daily risk of their necks.

Each of these items had its own particular name, under which it was formally entered on the records of government as among the resources of the State. In some places capable of producing certain articles to an unlimited extent, the local rates became so exorbitant as literally to prevent their production. An instance of the manner in which the tobacco tax was levied in one taluk will suffice to shew what opportunities existed for oppression and extortion, as well as the impediments which existed to the facilities or freedom of trade.

Every ryot in Kadur who wished to sell his tobacco, had to send for the Government gumasta, who first took a $\frac{1}{4}$ maund, called *male*, on account of Government; then another $\frac{1}{4}$ maund called *kai male*; then the heap was weighed: then so much, called *pammu*, was charged on each maund; then another tax called *sunka*; and lastly another called *mai pammu* was levied; and then it had to be taken to the nearest kotte, where it paid transit duty: when it was free to start, and run the gauntlet of the kottes along the road to the town or market for which it was intended.

As regards the Hâlat or Hâsil on areca nut, the three great contractors for the Ilakhas of the Nagar Division and the principal merchants used to meet annually at a place called Arga, and then fix, according to quality and locality of production, the price to be given for areca nut throughout the Division; and every ryot in the country was obliged to submit to the arrangements then decided upon or have the produce of his garden left upon his hands, for the whole system was so complicated, and all the subordinates so thoroughly and entirely under the control and authority of these confederates,

that no man could export for himself; the difficulties he had to contend against being such as are now scarcely credible. All producers almost without exception, were obliged to sell to these great monopolists, who exported at the minimum rate which they themselves fixed, and who, profiting by their position, their knowledge of the rules in force, and their power to act with impunity at a distance from all control, made immense fortunes and allowed the ryot only the smallest possible amount of profit or remuneration. Their advantages did not end here. They had also the privilege of exporting their goods without paying down the halat or transit dues, which they were permitted to adjust at a subsequent period, to allow as it were of their selling the article and realizing the price previously to being called upon for the full demands of the Sarkar. This gave rise to arrears to a most serious extent. They also possessed another immense advantage over the outside trader,—having the monopoly entirely in their hands, they never paid the ryots in cash. At first only sufficient money was given to enable the cultivator to pay his khist to Government, the rest remaining to be adjusted at a subsequent period, when a portion only was paid in cash, the balance always to a great extent being made good by cloths, valued at the maximum price, and brought back by the merchant or an agent from the great marts of Bangalore, Wallajabad, &c.

The number of articles upon which duties were remitted in the *Nagar Division* was 243, and the total annual value of remissions made since the assumption of the country was Rs. 2,04,925—10—2.

In 1832—3 and 1833—4, all duties on grain were abolished. In 1834—5, the information collected was sufficient to justify the Commissioner in taking the sayar under a mini in all but four taluks; which were also taken under the same management very shortly afterwards. In 1837—8, all internal duties were taken off iron, steel and cattle; and nine other items, oppressive, but of little value, were likewise struck off. In 1842—3, all transit duties were taken off iron, steel and cattle: and nine other items, struck off. In the same year, all transit duties were taken off supari, pepper and cardamoms; and in 1843—4, the duty was taken off sheep's wool and coffee in transit. In 1844—5, vexatious duties were taken off tobacco, and the contract abolished.* At the same time all unequal privileges as to rates of payment were done away with, and a uniform standard having been fixed instead of the former interminable variations, the trade in supari, pepper and cardamoms

* As the effect of this the revenue under the head of tobacco rose immediately 30 per cent. The mere withdrawal of the contractors made the true state of affairs at once fully apparent. On the trade becoming free, the producers found that they were able to obtain for their whole stock Rs. 3½ the maund, instead of Rs. 1½ which was all the contractors gave, and all that they could obtain under the previous system, as they could sell to no one else. And the extortion of the contractors will be still more fully appreciated when it is mentioned that the retail price at once fell from Rs. 6 to Rs. 5. Thus it will appear that the consumer, the producer, and the Government, all gained by the abolition of the contract system, and that the profit of a contractor was scarcely less than 300 per cent.

began to take its own natural course throughout the country. As a substitute for the abolished tobacco contract, a *halat* of one rupee per maund was fixed on all produced in Nagar, and an import duty of $1\frac{1}{2}$ on tobacco imported for consumption. A full drawback was given for all imported tobacco on re-exportation. The above changes were followed in 1847—8 by the final abolition of all remaining transit duties, so that nothing remained of the original system excepting some small dues on a few minor articles, to be removed at the first convenient opportunity.

To make up for the considerable loss of revenue sustained by these reductions, an additional *halat* was put upon cardamoms, and on the first sort of *supari*, while a reduction was made on the second and third sorts of that article, and on pepper. This step was not taken without consultation with the merchants concerned in the trade, and with their full consent. These merchants expressed themselves fully sensible of the weight of exaction and loss by detention from which they had been relieved.

In the *Ashtagram Division*, from the period of the assumption, the duties on 152 articles were struck off of the annual value of 3,09,863—4—7 rupees.

In 1832—3 and 1833—4, were struck off the whole of the duties on grain. In 1835—6, the transit duty on horses was abolished. In 1836—7, duties ceased to be levied on firewood, old timber, Europe articles, sandalwood oil, and vegetables on entering the town of Mysore. Many minor duties of the same kind were also struck off, among them the *Mahant rusum* (see p. 522). And in 1837—8, fruit, plantain leaves and straw were added to the articles allowed to pass free. In 1838—9 and 1839—40, the tax on stalls erected for the sale of parched grain, paddy, husked rice, and buttermilk was struck off. An item called *pasige*, which was a fee in kind exacted by the renter on almost all smaller articles offered for sale, was discontinued, as was also the duty on butter. The tax on blacksmith's forges was likewise abolished. This last only formed part of an extended measure of relief granted to the manufacturers of iron throughout the country, the greater part of whose heavy burthens were brought to account under the head of land revenue. In 1840—1, was abolished a most vexatious transit duty on cattle, which had been made to extend to cows and bullocks sent from the town to graze on country pastures, and an item termed *dukán pasára* was struck off. It consisted in a fee levied from certain poor people for the privilege of sitting down in the street to sell parched grain and other things from their baskets.

Up to this time no more had been done than has been here detailed, except that the renters had been deprived of all police power, and their proceedings

in other respects been most narrowly watched. Sufficient insight, however, had by this time been gained into the working of the system to justify further steps. At the close of 1841—2, therefore, the accounts underwent a most searching scrutiny, and all items not properly belonging to the land customs were transferred to their proper heads; and amongst them all those which constituted the Pattadi Sayar were removed from the books.

Even after this it was found that many abuses still existed in the system, which it was impossible to arrive at from the falsified accounts of the renters, and it was therefore resolved that the Sayar and Panch-bab of the Mysore taluk for the year 1842—3 should be taken under amāni management as an experiment. The above experiment having answered beyond expectation, permission was granted to extend the amani system in 1843—4 to ten more taluks. Orders were also issued for the immediate abolition of many katties in those taluks, and for sweeping away the remaining transit duties in the taluk of Mysore, where their effects had been found to be more pernicious to trade than elsewhere. In 1844—5, the sayar and abkari in all the remaining taluks were brought under Sarkar management, and transit duties were everywhere abolished. A most vexatious impost called *danmār* was also discontinued. It consisted in the exaction of a fee of one Kanthiraya fanam on every cow or bullock sold, no matter whether by the breeder to a ryot, or by one ryot to another. As the price of the small cattle of the country was generally about 10 or 12 fanams, this apparently trifling fee, levied as it was on every transfer, became a really heavy burthen.

In the *Bangalore Division*, from the period of the assumption, the duties on 312 articles were struck off, including grain, of the annual value of Rs. 3,73,208—6—10.

It is of course needless to mention that in this Division the grain duties had been swept away, and a vast number of items expunged from the tariff as in the other Divisions. But notwithstanding that a total reform was needed in the Bangalore Division only less than in the others, yet, as the sayar made up a very large item of the revenue, caution was required in disturbing it. As a first step, the whole was taken out of the hands of the izardars or renters, and put, in the year 1846—7, under Sarkar management; and the duties were levied avowedly on the old rules and system, the better, by acquiring a practical knowledge of those old rules, to reform and improve them afterwards. The result of that year's arrangements was an increase of nearly 48½ per cent in this item of revenue over that of former years under the renters, and an assurance that a fair and equitable method of collecting these duties might be devised without any very great loss to the Sarkar.

The first modification of the old sayar system in this Division was commenced in July 1847. It was simply the levying an *ad valorem* duty of 4 per cent on all articles at the place of export or despatch; and at the frontier kattes, on all articles entering the Division. To this general rule there were but three exceptions; 1st, raw silk, on which an *ad valorem* duty of 2 per cent only was imposed; 2nd, tobacco was rated in three classes,—i. 12 Kanthiraya fanams per maund; ii. choora or fibres, 9 fanams; iii. kaddi or scraps, 6 fanams per maund; and 3rdly, betel leaf for the consumption of the Bangalore town was charged 1½ cash per lundle. The above were the rates fixed upon the tobacco entering the Bangalore taluk, but in all other parts of the Division it came under the general rule of 4 per cent *ad valorem*. This arrangement obtained for 5 months, till December 1847, when the rules were revised in order that they might be adapted to act in concert with the sayar rules which were being simultaneously modified in the other Divisions, and the revision thus made was as follows:—Articles merely passing through the Division, to or from other parts of Mysore, to or from the Company's districts, or from one part of the Company's territories to others, were exempt from duty. Articles imported from the Company's territories, and consumed in this Division, were charged 4 per cent *ad valorem*; also articles exported to the Company's territories, from the Division. An *ad valorem* duty of 2 per cent only was leviable on articles exported to, or imported from, the other Divisions of Mysore. On certain articles produced and consumed in this Division, an *ad valorem* duty of 2 per cent was leviable at the place of production, and the same at the place of consumption. The duty on raw silk, tobacco and betel leaf was the same as stated above. All sugar and saccharine produce was exported free of duty; but sugar, &c., consumed in this Division paid duty the same as other articles.

In Chitaldroog, there was, as in other Divisions, no regular system or fixed principle of taxation under the former administration; but the practice was to tax every article whether of home or foreign produce; the amount of each tax was undefined and arbitrary. The tables of rates which were in the sayar kattes were never acted on, either before or subsequent to the assumption of the country. In practice every village and every custom house had its own rates, and these varied so much, that the classification of them was impracticable. All disputes relative to these taxes were decided by *māmul* or local usage. The sayar duties were divided into *bhara marg* and *chillar marg* (transit on high and cross roads); *silal bharti* (duties on exports or productions); and *karag padi* (town duties), with other local taxes included under the head of sayar. While taxation was thus general as respects things,

there were privileged classes and persons who were altogether exempt from duties. The sayar was generally rented by taluks, but for some years the whole faujdari of Chitaldroog was rented to one individual. The renting system was continued till 1845—6, and in the following year the sayar was placed under the management of the public servants.

Since the assumption of the country, however, many taxes levied on caste and domestic customs and institutions of vexatious character, were gradually remitted. In 1832—3, and 1833—4, duty upon grain was abolished. In 1835—6, the duty was taken off China articles. In 1837—8, duty upon vegetables, fruit, plantain and jungle leaves, and on horses, was discontinued. In 1838—9, duty upon firewood, grass, milk, sweetmeats, parched rice, buttermilk, elephants and fowls, was remitted. In 1841—2, an item termed *bazar pasgi* which was a collection in kind, from the renters of grain and other articles, for erecting stalls on market days, was abolished. In 1845—6, the duty upon cattle was abolished, and in 1847—8, duties on silk, on cotton, on all saccharine produce, and all transit duties, were abolished.

The following rules for the collection of sayar were established in this Division. The sayar duties on all but 38 articles were abolished. Of the above 38 articles, 6 were made subject to an *ad valorem* duty, as follows:—sthal bharti or export duty of 6 per cent was levied on supari of inferior quality, produced in the Division and exported, besides the karag, or town duty, on what was retained or consumed. Sthal bharti duty of 20 per cent, was levied on dry cocoa nut, besides the consumption duty on it, which was also to be levied according to the existing *mámul*. A bharti duty of 5 per cent was levied on date jaggery, besides the karag, or town duty, according to *mámul*. A bharti, of $\frac{1}{2}$ a rupee per maund, was levied on all tobacco the produce of the Division, excepting in the taluks bordering on the Bellary District, where only 2 annas were to be levied, the produce being inferior in quality. Half a rupee consumption duty on tobacco imported into the Division. A bharti duty of one rupee per maund was levied on silk manufactured in the Division, both the transit and consumption duties being abolished. The silk of the other Divisions was allowed to pass free from duty. But if such silk was retained in the Division beyond a limited time, it was subject to duty.

The total annual value of the remissions made in this Division under the head of sayar was Rs. 1,85,907—0—5.

Judicial System.—When the Governor General of India resolved that the Territories of the Raja of Mysore should be governed until further orders by a sole Commissioner and four European Superintendents in the Districts, the system and establishments for the administra-

tion of justice which then existed being considered inadequate to the wants of the country, an order for the establishment of Courts of Justice, with a draft of rules for their guidance, was issued on the 27th of October 1834. These Rules may be said to form the basis of the system of Judicial administration existing up to 1854.

The Courts established during this period for the administration of civil and criminal justice within the Mysore Territory may be classed under six heads or grades.

Taluk or Amils' Courts	...	85	Superintendents' Courts	...	4
Town Munsiffs' Courts	...	2	Huzar Amlat	...	1
Principal Sadar Munsiffs' Courts	...	8	Court of the Commissioner	...	1

Of courts of original jurisdiction there were two classes.—1st the Amils' Courts; 2nd, the Town Munsiffs'.

The Amils had power to decide without record all claims not exceeding rupees 20; with a record of proceedings, suits not in excess of Rs. 100; and when assisted by a Panchayat, all suits not exceeding Rs. 500. An appeal might be filed in the Sadar Munsiffs' Courts in the 2nd and 3rd description, but not in the 1st, unless when corruption or gross partiality was alleged, or when the claim involved landed property, under which circumstances the higher Courts, and eventually the Commissioner, might be appealed to.

The Mysore Town Munsiff had nearly identical power with that of an Amil in all suits regarding real or personal property, which were connected with, or may have originated within the limits of, the town of Mysore. The Bangalore Town Munsiff, in addition to the powers of an Amildar, had authority to decide, with a record of proceedings, all suits for real property not exceeding Rs. 500, and for personal property not exceeding Rs. 1,000, and an appeal from his decisions lay direct to the Superintendent of the Division, whereas in the case of the two former the appeal lay only to the Sadar Munsiff. A written decision had to be given in all cases, whether a record of proceedings had been kept or not.

Of courts of original jurisdiction and of appeal, there may be said to have been two classes. 1st. The principal Sadar Munsiffs' Courts; and 2nd, the Courts of the European Superintendents.

The Principal Sadar Munsiffs, of whom there were two in each Division, decided all suits in appeal from the Amils, their decision in all such appeals being final, unless in cases of landed property, or under circumstances of corruption or gross partiality; they also decided all original suits for real property above Rs. 100 and not exceeding Rs. 1,000, and for personal property above Rs. 100 and not exceeding Rs. 5,000.

All appeals from their decisions lay to the Superintendents of Divisions,

or to the Huzur Adalat, at the option of the suitor. The Munsiffs kept a record of all proceedings, and sealed, signed, and delivered, to both plaintiff and defendant in a suit, copies of the decree issued in the case. The Sadar Munsiffs had, moreover, authority to try all cases referred to them by the Superintendents of their respective Divisions.

The Superintendents had authority to investigate all appeals whatsoever from the lower courts of their Divisions, as also all original suits involving real property in value above Rs. 1,000, or personal property above Rs. 5,000. Under the Commissioner's special instructions, the Superintendents exercised control over the Munsiffs and all subordinate judicial authorities within the limits of their Divisions.

Of *courts of appeal*, there were two; 1st, the Huzur Adalat, a Native Court attached to the Commissioner's Office and having three judges; 2nd, the Commissioner's Court.

The Huzur Adalat had power to take cognizance of, and to pass a decision upon, all appeals from the subordinate Native Courts. This court was not assisted by a panchayat unless specially ordered by the Commissioner to convene one, but the judges might be assembled by the Commissioner and employed by him as his assessors whenever he deemed such a course advisable. This court was not one of original jurisdiction excepting when suits were specially referred to it for investigation by the Commissioner.

The Commissioner received appeals from the decisions of the Superintendents and of the Huzur Adalat, either in appeal direct, or by simple petition through the Firiyaad Department of his office. No original suits were filed in the Commissioner's Court; it was, however, optional with him to take notice, in any way he deemed fit, of any representation whatever laid before him.

The subordinate Revenue officers, the Superintendents of Divisions, and finally the Commissioner, decided all disputes or suits connected with Sarkar or mirási lands or other revenue matters. The Amils, principal Munsiffs, and Superintendents, were authorized to take cognizance of all suits regarding landed property when the land lay within the limits of their prescribed taluks, districts and Divisions, and of all other transactions whatsoever when the defendant permanently resided, or the cause of action originally arose, within the said limits. No suits regarding personal property were admitted when it was proved that no effort for its recovery had been made for a period of sixteen years.

On a plaintiff presenting himself at one of the Courts of original jurisdiction for the purpose of filing a suit, before a writ summoning the defendant

was issued, the plaintiff underwent a *vidi voce* examination in open court. If the judge, after hearing his statements, and inspecting his documents, was of opinion that the claim was tenable, the suit was at once filed, and numbered ; but on the contrary should the claim appear to the judge to be vexatious or unfounded, he refused to grant a writ until the plaintiff had deposited a sum sufficient to cover the probable amount of the costs of the suit (including the fee), or until he gave good and substantial security for the same. The plaintiff was permitted the option of undergoing the examination or of making the deposit. Should the judge refuse to file the suit, he must endorse his reasons for so doing on the back of the rejected plaint.

The suitor with his *plaint* was obliged to state the number of his witnesses and the nature of his documentary evidence ; and the defendant on being summoned was obliged to do the same in his *answer*. The *reply* and *rejoinder* were then filed, when the judge further questioned both parties, and then proceeded to receive and record the evidence on both sides. The judge was authorized to call for all such witnesses and documents in the course of the inquiry as he deemed necessary to a right understanding of the matter at issue, but should additional evidence be called for by either plaintiff or defendant during the progress of the suit, the judge did not comply with the requisition until he had ascertained by a *vidi voce* examination that their attendance was absolutely necessary. Should the inquiry be intricate or connected with landed property, the Amil, Munsiff, or Superintendent, might at his option convene a panchayat, which had, under such circumstances, the power to adopt the same measures as the convening authority, with a view to arriving at an equitable decision. Upon the completion of the panchayat's mahazar, the Judge drew up a *decree*, in which he recapitulated concisely the original statements, the evidence on both sides, documentary and oral, the opinion of the panchayat (if one was convened), his reasons for adopting or differing from the same, and lastly his own opinion or decision, with the arguments upon which it was based. The opinion of the Mufti or Pandit of the Court was also mentioned, should the Judge have considered it advisable to call for it in the course of the inquiry.

Should the losing party in a suit be disposed to file an appeal in the next superior court, the following conditions must be complied with.

He must, within thirty days from the date on which he had the decree of the lower court handed to him, forward to the judge of that court an *appeal arzi* for transmission to the higher court, and he must procure an endorsement on it by the judge to the effect that all costs, fees and fines levied in his court had been duly paid, and that substantial and reliable security for the amount decreed had also been lodged in his court. Non-compliance with any of these conditions was held as a valid reason for refusing to forward an appeal, or for

its rejection in the appeal court, should the appeal arzi be forwarded to the superior court direct. Special instructions from the Commissioner alone warranted any deviation from this rule. Should the grounds of appeal be corruption or gross partiality, proof of the truth of the charges must be adduced previous to any re-investigation of the case.

The appellant having complied with the established stipulations, and his appeal having been filed in the superior court, the proceedings of the original court were sent for, on receipt of which the respondent was called upon for an answer (no reply or rejoinder were requisite in the appeal court), and on receipt of this document, the proceedings of the original court were carefully re-examined, and should it be deemed necessary for the further elucidation of the matter to call for additional documentary or oral evidence, the appeal court's power in this respect was unlimited. All available evidence having in this manner been obtained, an *appeal decree* was drawn up, confirming or reversing the decision of the lower court, as the case might be.

Unless under circumstances of corruption, gross partiality, or extreme peculiarity, an appeal decision in cases of personal property was final. In cases involving landed property, however, notwithstanding a concurrent opinion on the part of two courts, a special or extra special appeal, the former to the Superintendent or the Adalat, and the latter to the Commissioner, were admissible.

In all the subordinate Native Courts, there were summon peons, who were employed in summoning defendants and witnesses, and who received two annas batta per diem during the time they were engaged on this duty. Witnesses received, according to their rank and circumstances, an allowance varying from one anna to one rupee daily, besides travelling batta at the same rate when the distance exceeded ten miles. Should the person to be summoned reside beyond the limits of the jurisdiction of the Amil, Munsiff, or Superintendent, an application accompanied by a summons was forwarded from each or any of these authorities respectively to his co-ordinate authority within whose jurisdiction the person resided, requesting him to serve the summons and direct the attendance of the individual in question. Should the required individual belong to the household of the Raja, the application for his attendance was forwarded through the Commissioner; and should he be a person of rank, or Government servant, he was summoned by the Superintendent on his own account, or through him on that of the Amil, or Munsiff, but not by the two latter authorities themselves. When witnesses resided at a distance, to save them trouble and expense, lists of interrogatories were

occasionally forwarded from one court to another, and to zillah courts in the Company's country under Regulation VII of 1841. Should the list be handed in by either plaintiff or defendant, it must meet the approval of the judge prior to being forwarded, and he was at liberty to add any further questions he considered it advisable to ask: the list furnished by the one party being shewn to the other in order that he might insert such cross questions as appeared reasonable and proper. The answers were invariably given and recorded in open court.

The money for the adjustment of expenditure on the above different accounts was deposited in the first instance by the party requiring the outlay, the whole sum paid for such purposes by the gaining party being subsequently charged to whoever lost the suit; the amount expended in this way being specified in the decree under the head of costs. In pauper suits, the amount of cost was adjusted by Government.

A list of as large a number as possible of the most respectable and intelligent inhabitants competent to perform the duties of panchayatdars, was kept in the Court of every Superintendent, Munsiff, and Amil. When the preliminary papers had been filed in a suit, from the recorded list of panchayatdars five persons next in rotation were (if a panchayat was necessary) nominated by the Court. No omission or passing over was permitted, unless in cases where the next on the list was sick, or engaged on another trial. The plaintiff or defendant might challenge three out of the five persons named. The merits of this challenge were summarily decided upon by the head of the court, and his decision was final.* No panchayatdar could be changed after the commencement of the investigation, unless in a case of urgent necessity or sickness. Under such circumstances, four members were permitted to continue the inquiry, an account of what had passed being given to the absent member when he returned. Should only three members remain to prosecute the inquiry, if it was nearly ended, and all three were unanimous in opinion, it was optional with the head of the court to direct them to conclude the matter or to take two new members.

Every Panchayat sat in open court, and free access to hear the proceedings was permitted. No person of bad character, or who was only a court hanger-on, *i. e.*, not a permanent resident in the neighbourhood, was permitted to sit on any panchayat whatever. Panchayatdars were

* Should the plaintiff or defendant be a foreigner, he was permitted to place a list of his own country people before the court, out of which the judge chose by lot two additional persons to sit on the inquiry. In such cases the panchayat was composed of seven members.

permitted to retire to a separate room to consult upon and draw up their mahazar. Undue influence to induce them to decide against their judgment was most strictly prohibited, although the head of the court, on receipt of the mahazar, was authorized to point out any discrepancy which he perceived in it, and was at liberty also to suggest, if requisite, that the panchayatdars should more fully explain the reasons of their decisions, or reconsider their opinion. It was optional with the panchayatdars to adopt or reject these suggestions, and in the latter case it was necessary that the head of the court should in his decree mention his reasons for differing from the panchayat in opinion.

Unless in cases of glaring injustice, gross partiality, or corruption, it was not deemed advisable to set aside the opinion of the majority of a panchayat; nor in any instance, was the opinion of the minority to form the basis of a decree. A new trial might be ordered, but only under extraordinary circumstances.

Professional *vakils* were not recognized by the Courts and were otherwise discouraged. In cases of necessity, a plaintiff or defendant was at liberty to appoint some other person to conduct his suit; but such individual should if possible be a relative or friend, as the employment of persons who gained a livelihood solely by instituting and carrying on suits for others in the courts was discouraged, their services being deemed both prejudicial and superfluous under a system of simple procedure. Should the head of a court be aware of any valid objections to the employment of an individual deputed to conduct a suit, he was at liberty to prevent him from pleading, and should any person employed as a *vakil* behave in a tricky or dishonest manner, he was prohibited from ever again practising in the courts of this Territory. Foreigners were as a matter of necessity permitted to employ strangers as *vakils*.

The declaration on oath was abolished in March 1840, and a circular order was issued by the Commissioner substituting in lieu of it the solemn affirmation authorized by the Government of India in Act V of 1840.

In the matter of *fees* and *finer*, several alterations took place since the first establishment of the Commission, and there was scarcely any subject connected with the civil procedure of the country which had given rise to the same amount of discussion. Until 1834 the institution fee was enforced in all suits, and as a natural result they were not very numerous, for only those who were well able to pay, or who by the

goodness of their cause were able to raise the money, applied to the courts ; it was found, however, that it prevented false litigation or the influx of professional vakils. But in consequence of the authorities having come to look upon it as a tax upon justice, it was finally abolished in 1834.

For some time, apparently, the abolition of the institution fee did not cause any very great difference in the number of suits ; but as soon as its discontinuance became generally known, the courts of justice became crowded with needy impostors, who, by inciting the people to litigate, and by the institution of false, vexatious and exaggerated suits, carried on the most systematic extortion, and so swelled the files of the courts that no increase of either the Judicial establishments or of activity on the part of the judges could keep pace with the demand, or clear the files, which in December 1837 showed a balance of 8,000 suits still pending ; and, as it appeared that out of those decided at that time in the courts 45 per cent of the claimants were non-suited, it became necessary to provide some check to this system of vexatious and unfounded litigation, and also to relieve if possible this great and useless pressure upon the valuable time of the judges. The consequence was, that in 1839 a circular was issued ordering the realization of a fee, equal in amount to the former institution fee, in all suits which were ascertained to be vexatious or unfounded. But this arrangement not being found sufficient, in March 1841 another set of rules was issued, which may be said to form the existing system at the close of the period under review with but very slight modifications, and which system, as the non-suits formed then only a small percentage, was looked upon as working well.

In all suits, a fee leviable at its termination became an incidental expense to the bringing of an action. This fee amounted to one anna in the rupee on sums not exceeding Rs. 500, and on sums above that amount, in a certain fixed proportion. This fee was leviable on all sums claimed in excess of the amount justly due, and as a general rule in all cases of non-suit, or where the defendant was cast in the full amount. In cases where the parties had applied to the courts more with the view of ascertaining their respective rights than from a desire to litigate, the fee was remitted by the judge. An appeal court had power on seeing grounds for the same, to remit the fees imposed in the lower courts. A fine in addition, equal to the fee in amount, was levi-

able in all suits which were found to be false, vexatious or unfounded. The fee was leviable by process of execution, immediately upon the judgment being passed. Should the property of the party liable not be sufficient to realize the amount, it was held as a debt due by him to the Government, and he was not permitted to file another suit in any court until the amount was adjusted ; but in the case of a fine, imprisonment not exceeding six months was given in cases of default of payment.

At the close of a suit, should the defendant fail to attend for the purpose of receiving the decree, a notice for his attendance within ten days was forwarded to the Amildar, and if he was not to be found, the notice was affixed to the outside of his door. After a month had elapsed from the date of the notice, should the defendant not appear, the decree was carried into effect in the usual manner. All decrees against individuals who lived within the jurisdictions of the Sadar Munsiffs were carried into effect by the Amildars under their orders ; the Amildars being invariably executive officers, excepting in the towns of Bangalore and Mysore, where the Town Munsiff's had executive powers. Sadar Munsiffs, when the defendant's property was beyond the limits of their jurisdiction, forwarded the application for execution of decree through the Superintendent. No decree was carried into effect unless a special application to that effect was made by plaintiff.

When it became necessary to distrain the property of any individual, the Amil, on being applied to, forwarded a statement of the defendant's property. This statement must be duly attested by two respectable merchants of the place. The Amil was held responsible for its accuracy, and it must contain mention of any Sarkar balances due by the individual ; and then, should the amount not be paid within a certain time specified, the property, on a requisition from the court, was sold by public auction. The Government claim having first been made good, the balance was appropriated to the adjustment of the decree. The only articles of property exempt from distraint were the tools and implements of the individual's trade or calling, his wearing apparel, his drinking lotah, and, if a ryot, grain for his subsistence until the next season. Concealment of property rendered an individual liable to short imprisonment and the property to seizure. Should it be proved in the course of an inquiry, that the defendant was disposing of, or making away with, his property clandestinely, or that he was about to remove

himself beyond the jurisdiction of the court, the judge could oblige him to give security for the amount claimed, or, if he refused, place him in close custody until it was given. This course of proceeding, however, was adopted only on most reliable proof. Should the defendant reside within the limits of the Company's Territory, the decree was carried into execution under the provisions of Act XXXIII of 1852.

All parties mutually consenting to adjust any differences (unconnected with inámti or mirási privileges), were permitted, as in ancient times, to do so through the arbitration of an *ápas pancháyat* of not less than five members; each party nominated two members, these four then jointly appointed their own president. A muchchalika binding themselves to abide by the decision of the panchayat was registered by the parties in the Amildar's cutcherry. The panchayatdars were authorized to summon witnesses, &c., and their mahazar on an application through the Amil to the Superintendent, was looked upon by the latter in the light of a legal decree and was acted upon accordingly. An *ápas panchayat* was not empowered to levy fines, fees, or any penalty.

Razínámas, or bonds of mutual compact or agreement between parties were, when properly attested, held to be binding and valid documents in all the courts of the Territory, and it was only under circumstances of fraud or collusion that they were ever rejected.

Should a defendant fail to appear within the prescribed time, and after due notice had been given him should be unable to assign satisfactory reasons for his absence, an *ex parte* decree was passed by the court. *Ex parte* decrees were admitted by an appellate court within the prescribed period, on the appellant proving to the satisfaction of that court that his default or absence from the lower court was unavoidable, and not wilful; and should such proof be accepted, the proceedings were returned to the lower court for re-investigation; should it be rejected, a fine was levied not exceeding double the amount of fee imposed in the lower court.

With the exception of orders limiting the rate of interest which a decree could award to 12 per cent in money dealings, and to 24 per cent in grain transactions, and also directing that a total of interest greater in amount than the original loan should not under any circumstances be awarded; interest was a matter which had to a great extent been left to self adjustment in the Mysore Territory, until circumstances induced the Commissioner to order,—that in all future transactions in which the rate of interest was not distinctly laid down,

the courts were not to award a higher rate than 6 per cent ; but that, where the rate of interest was expressly noted in the bond, the judge was to draw up his award in conformity with the agreement.

The language of all judicial proceedings and decisions was Canarese, but, should the vernacular language of any officer who was head of a court be other than Canarese, he was bound to write his decision, or any particular points regarding which he had to call for proof, in his own language, and these papers having been translated into Canarese, a copy of both the original and the translation were placed on record. Should any head of a court, however, be sufficiently conversant with Canarese to use it instead of his own language he was at liberty to do so.

In the case of a minor, the amount to which he was heir was placed in deposit in the treasury, the greater portion being as a general rule invested in Company's paper until such time as he attained his majority, which is fixed at 18 years of age in Mysore ; and during the interim he was placed under a respectable relation or some trustworthy person, and a suitable allowance made out of his property for his education and subsistence. Should there be a large amount due to the minor's estate, a curator was appointed, whose only duty it was to recover the several sums due and remit them to the treasury. He received on all sums realized a commission of 5 per cent. In the case of insolvents who had a large amount of debts to pay and receive, the usual course was to assemble a panchayat in the Commissioner's Court, which, under his special instructions, investigated the affairs of the estate, and submitted a statement and opinion on the matter. In some instances, the Adalat settled such matters under instructions from the Commissioner. In the case of intestates also, a panchayat was sometimes convened. Should there be no heir, and money have to be paid and received, a curator was appointed ; should there be no heir, and no creditors, the amount of which the intestate died actually possessed, was transferred to the Sivayi Jama ; and should there be an heir, as soon as he had proved his right to the satisfaction of the Commissioner, the property was transferred to him ; if he was a minor, the usual course was pursued.

No individual of the Barr and Sawar departments, which were under the control of the Military Assistant, could be summoned to attend a Civil Court unless through that officer, nor could any decree against them be executed without a previous intimation to him.

The Police Superintendent had power to adjudicate in all suits originating within the limits of the Cantonment of Bangalore which did not exceed pagodas 500 or rupees 1,750. His decisions were summary, and he was not obliged to keep a record of proceedings unless in cases of landed or house property. He might assemble a panchayat in any case in which he deemed it advisable. An appeal from his decision lay direct to the Commissioner in cases of landed property, but he was not required to transmit appeals in suits regarding personal property. The Commissioner could, however, take cognizance of any case whatever in which he deemed it just and right to interfere.

Suits against His Highness the Raja, were filed in the Adalat Court, under the immediate sanction of the Commissioner.

It was required that in all transactions, the bonds, bills of sale, agreements, transfers, deeds, and other documents, should be executed on stamped paper of a fixed value. Any unstamped document presented in a suit was received and filed, but only on payment of a sum equal to ten times the amount of stamp duty originally leviable upon it. No suits for the recovery of vakil fees were permitted to be filed in the Mysore courts.

Criminal Justice.—The Courts for the administration of Civil and Criminal justice were identical. The Amildar was head of the police in his taluk, and to assist him in revenue and magisterial business, he had under his orders a Peshkar, a Killedar, Shekdars, Hoblidars, Dafedars and Kandachar peons ; of these the Killedar and Hoblidar only were exclusively police officers.

In cases of personal wrong, or for petty offences, the Amildar had power to confine an individual in the stocks for not more than 12 hours, or to confine a person not in the stocks or in irons, for not more than 14 days. Unless in cases of open violence, however, the Amildar was not authorized to interfere except at the instance of a complainant. The Amildar could not keep any person in confinement pending investigation for a longer period than seven days without a reference to the Superintendent. The Shekdars and Hoblidars had authority to confine, for not more than 24 hours, any persons suspected of heinous crimes, such as murder, burglary, gang, forch, or highway robberies : within that time they must make such inquiries as would enable them to release the parties or report to the Amildar for orders, and they were held strictly responsible for any abuse of this authority. Should a longer detention ap-

pear necessary, they must either send the prisoner and witnesses to the Amildar, or forward to that officer a statement of the circumstances for his orders. All offences or unusual occurrences were regularly reported by the talvars and totis of villages, as also by the Killedars and Kanda-char officers to the Amildar, and by him to the Superintendent. It was the peculiar duty of the Killedar, and, under his orders, of the subordinate police officers, to search for information, and place it before the panchayat in all taluk inquiries.

The principal Sadar Munsiffs had power to punish to the extent of two years imprisonment, with or without hard labour, in all cases referred to them for investigation and decision by the Superintendent, but they had no original jurisdiction in criminal matters. The Superintendent had power to sentence to seven years imprisonment, with or without hard labour in irons; he reviewed all cases inquired into by Amildars or decided by Munsiffs, and commuted or confirmed the decisions of the latter. In cases of murder, gang, or torch robbery, or other offences which involved capital punishment, or a term of imprisonment in excess of his powers, the Superintendent referred the matter for the decision of the Commissioner. The Commissioner had power to pass sentence of death, transportation for life, or imprisonment with or without hard labour, on parties convicted of murder, or of gang or torch robbery, when the latter crimes were attended with torture or other aggravated circumstances, or when from the frequent occurrence of such crimes he considered an example advisable. All sentences of death required to be submitted to the Supreme Government for confirmation. In criminal matters, the Adalat Court had no jurisdiction, unless when cases were referred to it for investigation by the Commissioner.

Panchayats for civil and criminal investigations were summoned in the same manner, and a prisoner had the same permission to challenge as a plaintiff or defendant. There was this difference, however, that no criminal investigation was permitted to be carried on without a panchayat, whereas in civil cases it was optional with the head of the court to convene one or not as he thought desirable.

The Police Superintendent of the Bangalore Cantonment had authority to punish, with or without hard labour, to the extent of seven years, and to the extent of Rs. 50 by fine. The Commissioner, however, had power to commute or remit any punishment awarded by that officer. In cases involving a punishment in excess of seven years imprison-

ment, the Police Superintendent referred the case to the Commissioner.

Magistrates, and district police officers under the orders of the Magistrate, were permitted to apprehend and place in confinement, persons of notoriously bad character or whose habits of life were suspicious, until they could give good and reliable security for their future good conduct. To prevent undue oppression on the part of subordinate police authorities under the pretence of carrying out the provisions of this order, every individual apprehended under its authority was forwarded to the Superintendent or his Assistant, for examination, and could only be confined or punished under the express orders of the former, and no individual taken up under the provisions of this regulation could be confined for a longer period than 3 years.

Villagers were authorized and encouraged to use arms of every description in defending themselves and their property whenever their village was attacked by either gang or torch robbers, and valuable bangles were bestowed by the Government on those who distinguished themselves on those occasions.

The Naiks of the Lambanies, and the head men of the Kormars and Waddars—these three castes, but more particularly the two former, being looked upon as the professional thieves of this part of India,—were obliged to furnish good and reliable security for the good conduct of their *tindas* in the case of the first, and of those under their immediate control in the case of the others. The different classes were considered to be permanently under the surveillance of the district police, and all their movements or changes of abode were watched, noted and reported. A register shewing the name and dwelling place of each individual of the different tribes was kept up in each taluk catcherry, copies of which were forwarded regularly to the Superintendents of the Divisions.

Transition Period, 1856—1862.

The period of the Governor General Lord Dalhousie's visit to Mysore, or the year 1855-6, may be considered to mark the termination of the exclusively patriarchal and non-regulation system of government, which, under the statesmanlike control of Sir Mark Cubbon, and the exertions of his select body of able administrative officers, had achieved results beyond all praise.

The administration up to this period, as set forth in the reports

drawn up at the time, from which the foregoing accounts have been compiled, was reviewed by Lord Dalhousie in the following terms, under date, Fort William, the 7th February 1856.

“ The Governor General in Council has read with attention, and with very great interest, the papers submitted. They present a record of administration highly honourable to the British name, and reflecting the utmost credit upon the exertions of the valuable body of Officers by whom the great results shewn therein have been accomplished.

“ In the past autumn, the Governor General had the opportunity of witnessing some portion of these results with his own eyes, during his journey from the Neilgherries through Mysore to Madras. His journey was necessarily a hasty one. Even the cursory examination of the country, which alone was practicable during the course of a week's visit, enables him to bear testimony to the extent to which works of public improvement have been carried in Mysore, and to the favourable contrast which the visible condition of that Territory and of its people presents to the usual condition of the Territory of a Native Prince, and even to the state of Districts of our own which may sometimes be seen.

“ During the period of twenty five years which has elapsed since Mysore came under the administration of British Officers, every department has felt the hand of reform. An enormous number of distinct taxes have been abolished, relieving the people in direct payment to the extent of 10½ laks of rupees a year, and doubtless the indirect relief given by this measure has exceeded even the direct relief. Excepting a low tax upon coffee, (which is raised on public land free of rent or land tax), no new tax appears to have been imposed, and no old tax appears to have been increased. Nevertheless the public revenue has risen from forty-four to eighty-two laks of rupees per annum.

“ In the administration of Civil and Criminal justice, vast improvements have been accomplished : regularity, order and purity have been introduced, where, under native rule, caprice, uncertainty and corruption prevailed ; substantial justice is promptly dispensed, and the people themselves have been taught to aid in this branch of the administration, by means of a system of Panchayats, which is in full and efficient operation. And in the department of Police, the administration of British Officers has been eminently successful. In short, the system of administration which has been established, whether in the Fiscal or Judicial department, although it may be, and no doubt is, capable of material improvement, is infinitely superior to that which it superseded : and has, within itself, the elements of constant progress.”

From that time, the State debts having now been extinguished, commenced a period of transition, which continued till 1862, when Mr. Bowring, on assuming the government, completed the introduction into

every department of the more or less regulation system which has since been developed. From 1856-7 also began the publication of Annual Administration Reports.

The earlier changes introduced during this period did not result from a new policy adopted with regard to the State of Mysore individually, or from the personal views of Lord Dalhousie. They operated equally in all parts of India and arose out of the renewal of the East India Company's Charter in 1854. The preamble of the celebrated educational despatch of that year from the Court of Directors, which runs as follows, testifies to this :—

“ It appears to us that the present time, when by an act of the Imperial Legislature the responsible trust of the Government of India has again been placed in our hands, is peculiarly suitable for the review of the progress which has already been made, the supply of existing deficiencies, and the adoption of such improvements as may be best calculated to secure the ultimate benefit of the people committed to our charge.”

One of the first changes was the appointment, in 1856, of a Judicial Commissioner, to relieve the Commissioner of a branch of work which had grown to dimensions beyond his power to discharge in addition to the various other duties devolving upon the Head of the Administration. The formation of a regular Department for Public Works, and the institution of a Department for Education, both date from the same period. In 1858, a Principal Sadr Munsiff's Court was established in the Cantonment of Bangalore, to relieve the Superintendent of Police of the trial of civil suits. In 1860 the head-quarter establishments were revised, and additional European Assistants appointed. The Bangalore Police force was reorganized in 1861, and the Head Kotwal made Sar Amin, with magisterial powers equal to those of an Amildar. Of other measures, steps were taken for the Conservancy of Forests, and for the planting of topes and avenues; Botanical Gardens were formed in the old Lal Bagh,* and a Government Press was established.

A measure of greater importance was the revision of the Mohataifa in 1860. This was levied in a manner analogous to that of the Sayar

* An Agri Horticultural Society was established at Bangalore in 1839, under the auspices of the Commissioner, who made over to it the Lal Bagh and all need other assistance in the way of convict labour, &c. In all other respects the Society was supported by private contributions; but constant changes among subscribers led to its dissolution in 1842, and the garden was then restored to the Commissioner. In 1856, Dr. Claghorn visited Bangalore with the object of conferring regarding the re-establishment of a Horticultural Garden, and a professional Superintendent was obtained from the Royal Botanical Gardens at Kew. This arrangement still continues, and the Lal Bagh has become not only a most ornamental but from a botanical point of view one of the most valuable gardens in India.

and Halat, which had been dealt with during a series of years as previously related. It consisted of a vast number of items, and was closely interwoven with the Chillar Báb (miscellaneous items), which formerly included many hundreds of trifling, partial, oppressive, and in some instances indecent taxes. Year by year some of the most oppressive and offensive had been struck out, until somewhat less than one hundred remained. Even these included taxes so partial that occasionally only one individual in a village was found to be liable to the cess. Indeed so complicated was the whole system, that sometimes it was scarcely capable of explanation by those who were supposed to be thoroughly initiated.

The Chillar Báb being completely swept away, the Mohatarfa was modified. The house, shop, loom, mill and plough taxes, which formed the principal items, were taken as the basis for the revision. The discrepancies which obliged a man with a retail shop to pay 30 or 40 rupees annually, while his neighbour in the possession of a large store paid only 4 annas; and the system under which ryots of the same village paid sometimes one rupee and a half, and sometimes half an anna, on their ploughs, was finally and completely abolished. All houses, shops, looms and mills were registered, and assessed under four classes, with distinct rates for large and small towns and large and small villages, the rates ranging from Rs. 60 a year on the largest mercantile store in Bangalore or Mysore, to half a rupee on a village hut or loom. All cultivating ryots were exempted from mohatarfa, unless they kept a shop, loom or mill besides, but they paid a plough tax, ranging from 6 to 3 annas, and the amount raised under this head was formed into a Local Fund, devoted to the formation and repairs of cross roads.

The subsequent radical changes introduced in 1862, and the grounds for them, are thus described in the Annual Report for that year. In pursuance of the principle that the elements of a Native Administration should be maintained in their integrity, and no radical changes permitted in the system inaugurated on our assumption of the government of the country, and carried on with success for nearly 30 years, every change in the Mysore Administration which seemed to carry with it the spirit of innovation, had hitherto been introduced tentatively, and with extreme care, the object being always to carry the people with the Government in any reforms. The European officers were few in number, great latitude of authority being exercised by the Superintendents of Divisions, aided

by one, or, at the most, two Assistants, without any recognized or defined powers, and the check over the details of administration being therefore necessarily incomplete.

Under this system the true interests of the Province, as is well known, materially advanced, but as years passed on, and population and revenue increased, serious inconvenience arose, and it became evident that the executive officers, already overburdened with multifarious duties, could not undertake the additional labour which would be entailed on them by the necessity of a revision of the working of the different departments, and the introduction of a more regular system in every branch of the administration. In fact, it became apparent that a Territory yielding an annual revenue of a crore of rupees, could not be efficiently administered with the same agency as that which was instituted when the revenue was not much more than one half, and hence the year 1862—3 was specially marked by a gradual reorganization, and an extension, of the agency for conducting the administration.

The former establishment of the Commissionership of Mysore consisted of:—the Commissioner's staff at Head Quarters; five Superintendents, one posted to each of the four Divisions of the Mysore Territory, and one to the Province of Coorg; three Assistants and ten Junior Assistants to the Superintendents of Divisions; the Court of the Huzur Adalat, (consisting of 3 Judges,) originally intended as a superior court for the adjudication of cases in which either the Maha Raja of Mysore personally or his immediate retainers were concerned, but of late years disposing only of appeals from the Principal Sadar Munsiffs and Munsiffs, of whom there were 10 in the different districts.

The Commission was now reorganized on the following plan: Mysore and Coorg were distributed into three Divisions, subdivided into nine Districts, the Territory of Coorg included.* A Department of Audit and Account was newly instituted at Head Quarters. The Court of Huzur Adalat and the Munsiffs' Courts were abolished; a body of Native Assistants, analogous to the class of Extra Assistants in Non-Regulation Provinces, was introduced, and a Small Cause Court established in the Cantonment of Bangalore. No material changes took place in the designation of the Officers employed in the revised Commission, the names of Commissioner of Mysore, and Superintendents of Divisions

* Under orders subsequently received, the District of Coorg was kept separate from Mysore.

being retained, while the subordinates of the latter officers were entitled Deputy Superintendents of Districts, or Assistants, as the case might be.

The former vast Divisions, averaging 7,000 square miles, were thus broken up into two, each with a Supervising Officer and an Assistant, European or Native, according to circumstances, three such Districts being placed under the superintendence of a Divisional officer, and Coorg being comprised in one of the Divisions.* The orders of Government conferred upon the Superintendents the civil and criminal powers exercised by a Commissioner and Superintendent in Non-Regulation Provinces. The Deputy Superintendents were empowered to adjudicate civil suits up to any amount, appeals lying to the courts of the Superintendents, and in criminal matters were vested with the full powers of a Magistrate, under the Code of Criminal Procedure. The powers of the Assistants, European and Native, were dependent on the standard of examination passed by them, under rules on the subject prescribed by Government.

The necessary arrangements for giving effect to these orders having been made, on the 25th November a proclamation was issued, notifying the future executive Divisions of the Province, with the Districts and Taluks attached to each as shewn below, and intimating the abolition of the Huzur Adalat Court, as also those of the respective Principal Sadar Munsiffs and Munsiffs.

Division.				District.				No. of Taluks.
Nandidroog	...	...	...	Bangalore	...	...	...	13
				Kolar	...	...	...	11
				Tumkur	...	...	...	9
Ashtagram	...	...	...	Mysore	...	...	...	13
				Hassan	...	...	...	11
Nagar	...	...	...	Shimoga	...	...	...	10
				Kabur	...	...	...	8
				Chitaldroog	...	...	...	10

The territorial transfers, and changes of jurisdiction involved in them, coupled with the revision of subordinate establishments, the introduction of the Penal and Criminal Procedure Codes, and the modern financial system of Budget and Account, necessarily affected every public department. In the Judicial Department, not only were the number, constitution, and jurisdiction of the Courts altered, the traditionary practice

* See note on last page.

by which their operations were in a great measure regulated, was abrogated or materially affected by the introduction of the Codes, and the new system necessitated an immediate and complete change in all judicial forms and returns.

Justice.—The number of Courts for the transaction of judicial business in Mysore amounted previously to 103, and were as follows : Judicial Commissioner 1 ; Huzur Adalat 1 ; Superintendents, aided by their Assistants, 4 ; Principal Sadar Munsiffs 6 ; District Munsiffs 4 ; Town Munsiffs 2 ; Sar-Amins 2 ; and Amildars 83. The criminal courts consisted of the above, with the addition of the court of the Superintendent of Police, Bangalore.

The courts of original civil jurisdiction were presided over by officers too underpaid to secure tolerable integrity. The bulk of the appeals lay to the Munsiff's Courts, and ultimately to that of the Huzur Adalat, the efficiency of which depended on the character of the judges for the time being. The procedure was cumbrous and dilatory, much devolving on unchecked petty subordinates, and the judicial officers were entirely untrained. In criminal matters, great irregularity prevailed in all preliminary inquiries, and offences were so vaguely defined that no conclusions could be formed from the returns, of the nature of offence committed. In both departments, officers of all grades were hampered by the panchayat system, under which, the finding of too often a few illiterate or even corrupt individuals, formed the basis of the court's decision. The pressure of their multifarious duties rarely admitted of the European officers trying even important cases themselves, and this, added to the circumstances above mentioned, rendered their control over the proceedings of the courts very superficial.

Under the revised constitution of the Mysore Administration, the following officers held courts, either of original or appellate jurisdiction, in civil and criminal matters : 1 Judicial Commissioner ; 3 Superintendents of Divisions ; 8 Deputy Superintendents of Districts ; 2 Judges of the Small Cause Court, one European and one Native ; 10 Assistant Superintendents, European, of whom one was employed as Superintendent of Police in the Bangalore Cantonment and three were probationary ; 15 Assistant Superintendents, Native ; and 86 Amildars of taluks. Of the above, however, the Judges of the Small Cause Court took no part in the criminal, and the Superintendent of Police, Bangalore Cantonment, took no part in the civil work of the Province.

The pay of the Amildars was raised, by which the services of more efficient and trustworthy men were obtained. The Munsiffs and Judges of

the Huzur Adalat were represented by the class of Native Assistants, on liberal and progressive salaries, and whose promotion depended on departmental examination tests. A complete but simple code of rules for the guidance of Amildars in the decision of civil suits, compiled partly from the Panjab rules and partly from the provisions of Act VIII of 1859, was drawn up, carefully translated into Canarese, and printed for distribution to the Taluk Courts. The Penal Code and Code of Criminal Procedure defined offences, gave the measure of punishment, and regulated the procedure, without entirely excluding the co-operation of juries. The reduction in the size of Districts admitted of the European officers assuming their legitimate duties of trying cases themselves as Magistrates and Judges, and of their exercising a strict control over the proceedings of the subordinate courts. The system of registers and returns was revised, so as to ensure greater despatch in the disposal of judicial business of every description.

The system of fees was abolished from the 1st of November 1862, and with it also ceased, as a rule, its concomitant system of imposing fines under certain circumstances in civil suits. In lieu of the former system, entailing an ever increasing balance of fees, which, imposed as they were after the decision of suits both by the original and appellate courts, were found very difficult to realize, and proved not unfrequently perfectly irrecoverable, it was under the revised Stamp Rules made incumbent upon litigants, except in the case of pauper suitors, to pay, as in Her Majesty's Territories, an institution fee in the shape of a stamp paper, on which the plaint was written, and which was of value corresponding with the sum claimed.

The Superintendents of Divisions having been vested with the powers of Sessions Judges under the provisions of the Penal Code and Code of Criminal Procedure, the Judicial Commissioner was vested with the powers of the Sadar Court. Sessions cases in which a sentence of death was passed on the prisoners, were forwarded for confirmation to his Court, which was one of final reference, of revision, and of appeal, in all judicial proceedings.

Police.—Except in the Cantonment of Bangalore, a regularly organized Police Force was unknown in Mysore. From the Amildar, the recognized head of police in the taluk, down to the lowest taluk peon, the officials were employed promiscuously, as police, in serving judicial processes, in supplying the wants of travellers, and in revenue duties of all kinds. The police which was founded on the remains of the old Kandāchar or armed militia of the country, and closely identified with the agricul-

tural population, had always been strictly localised, and as the men were rarely removed from the vicinity of their own village, and were under mere nominal supervision, they were, as a necessary consequence, entirely devoid of discipline and training. By effecting reductions in their numbers, and increasing the rates of pay, the most inefficient men were got rid of, the character of the force improved, and it was now possible for the men to live on their pay, which was clearly not the case when the average rate of a peon's pay was rupees 3 per month. The police generally were now confined to their legitimate duties, a separation having been made between revenue and police peons. The Bangalore Cantonment Police was improved, and special police establishments formed for the Pettah or Town of Bangalore, and for Mysore, Tûnkûr, and Shimoga, instead of the former system of detaching men in rotation from the taluks, or from a separate establishment attached to the Division head quarters.

Jails.—The subject of jail management received much attention. A new scale of jail dietary was framed. A system formerly prevailed in the Mysore jails, of supplementing each prisoner's daily allowance of ragi grain with a money allowance of a few pie per diem, to enable them to buy firewood, vegetables, tobacco and other luxuries. This arrangement, as destructive of discipline, was entirely put a stop to.

Revenue.—All lands in Mysore were classified under the Budget system, according to the tenure on which they were held, which is shewn below :—

<i>Village Settlements.</i>		<i>Individual Settlements.</i>	
1. Permanently settled villages, (kāyam gutta).	Govt.	1. Ryotwar, (kandavam or assessed Government lands.)	
2. Villages on a progressive rental (shraya).	Inam.	2. Patavi or division of produce.	
3. Villages rented for one year, (kālāvadi ijāre)		1. Aridhamānyam, uttār, &c., lands.	
4. Jūdi or lightly assessed villages.		2. Jōji, or lightly assessed lands granted to village servants.	
		Do Brahmins, fakirs, and devasthan.	
		Do private chatraus and topes.	

They were subdivided, as is usual in the south of India, according to the nature of the cultivation, into *wet* or irrigated, *dry*, and *garden*, the collections being shewn in account as Money Payments and Batāyi, *i. e.*, division of crop between the Government and tenant. Attention was steadily directed to reducing the extent of land under the batayî tenure, by substitution of money assessment where practicable, on account of the numerous objections to the former system. The batayî system, however, could only be finally and satisfactorily extinguished

by a Revenue Survey, as there were no other means of equitably assessing the large area held on this tenure under tanks.

The direct manufacture of spirits, toddy, arrack, and ganja, by Government, was entirely discontinued, and the Abkari revenue temporarily farmed, prior to the contemplated introduction of the Sadar Distillery system.

The Mohatarfa, which till a late period included a variety of vexatious imposts founded on no uniform principles, had been revised in 1860, and comprised now the following: taxes on houses, on shops, on looms, and on oil mills. The only other direct tax in Mysore was the Plough Tax, revised simultaneously with the mohatarfa, in substitution of the former miscellaneous taxes on ploughs, castes, professions, &c., styled Chillar Báb.

The annual renewal of *ryotwar pattas* was as far as possible discontinued, and existing pattas confirmed for 5 years, pending the introduction of a Revenue Survey, thus giving additional security to the ryot against the fraud of the shanbhog, and a great saving of unnecessary labour to the Government officials.

Encouragement was given to private individuals to undertake the repairs of tanks the revenue return from which did not hold out the prospect of the repairs being remunerative to Government, by prescribing such low rates of assessment on dry land converted into wet, as secured to the ryots a tangible profit; and in the case of persons constructing new works, such as tanks or wells, at their own expense, the former dry-land rate of assessment was continued, on the equitable principle, not hitherto generally recognized, that a man should reap the profits of capital laid out by himself.

Finance.—A commencement was made towards introducing the Budget system of Accounts. Formerly the accounts were all kept in Canarese, and the pre-audit of expenditure was unknown. English forms and figures were now ordered to be made use of. Currency notes were gradually brought into use, and the confused and miscellaneous copper coins in circulation it was arranged should be by degrees withdrawn.

Military.—The Mysore Horse or Silledars, on the assumption of the country in 1831, were avowedly disorganized and comparatively useless, but since they had been under European supervision they had greatly improved, and were now probably as efficient as any other body of Savars of the same class. The Barr or Infantry were very useful men, and

constantly employed in police duties. They guarded treasure and prisoners at the kasba of every talak, and escorted both to the District head quarters when necessary. The pay of a trooper in the Mysore Horse was fixed in 1833 at Rs. 20. In those days this pay was ample, but since then the prices in Mysore had risen considerably, as in other parts of India, and Government this year sanctioned the rate being raised to 22 Rs. and the gradual reduction of the existing strength of the 7 regiments from 2,500 to 2,100, or 300 men for each. No change in regard to the other grades was considered necessary. The total strength of the 4 battalions of the Barr was also to be reduced from 2,161 to 2,000, the pay of 1st class sepoy being raised from Rs. 6½ to 7, and 2nd class from 5½ to 6, with a corresponding increase for non-commissioned officers.

In fixing the complement of the Mysore Local Force, the wants of the whole Province were carefully considered, and the troops utilized as much as possible by redistributing them according to the requirements of the newly formed Districts. With this object, both Silledars and Barr, instead of being scattered over the country in small parties, were concentrated, by being withdrawn from those outposts where their presence was not necessary, and stationed at the head quarters of Districts, and on main lines of road.

Administration since 1863.

Instead of attempting to record in chronological order the various measures which have from time to time been introduced in pursuance of the policy in operation since 1863 in the Administration of Mysore, it will be more convenient to describe the present system and institutions of Government under the two major heads of Civil and Military,—subdividing the former into Revenue and Finance, Judicature, Public Works, Public Instruction, and Medical Departments, going back to review the important steps by which each has attained to its present constitution and practice.*

* The information is taken from a variety of official papers too numerous to mention; but much of it, to 1872, is based on the Administration Report for that year by Mr. Wellesley, which contained retrospective summaries relating to each Department by their respective Heads, such as Public Works by Col. Sankey, R. E.; Chief Engineer; Finance by Mr. Hudson, Deputy Accountant General, &c.

Civil Departments.

Revenue and Finance—The gross revenue of Mysore in 1791, according to accounts furnished to Lord Cornwallis by Tippu Sultan, was Kanthiraya pagodas 14,12,500, or in the present currency about 42 lacs of rupees. Tippu Sultan was finally defeated and the authority of the British Government established in 1799 and 1800. The gross revenue from that time is given as follows :—

		Kanthiraya Pagodas	or	Government Rupees.
1799—1800	...	21,53,000		62,79,583
1800—1801	...	24,20,000		70,58,333
1801—1802	...	26,04,000		73,93,000
1802—1803	...	25,41,000		74,11,250

The revenue subsequently languished under the personal administration of the late Maharaja, and we find that in the year after the country was placed under British Commissioners the receipts amounted to Rs. 55 lacs only, in the next to 58 lacs, then to 67 lacs, and to 76½ lacs in the year 1835—6. It fluctuated between 63½ and 81½ lacs till 1853—4. The next year of increase was 1856—7, when the gross receipts were 89 lacs ; in 1859—60 they amounted to 99 lacs, and in 1861—2 to 100½ lacs. In 1865—6 they reached 109 lacs, and in 1872—3 close upon 110 lacs, since when the revenue has stood at from 109½ to 109¾ lacs.

In the year 1831, when the country was placed under British management, misrule had disorganized the Native Administration and brought the public exchequer to the verge of bankruptcy, and one of the first subjects that demanded the attention of the British Commissioners was the State debt. The amount was approximately stated in 1832 at about 65½ lacs of rupees, consisting of arrears of pay to the local troops and civil establishments, and the personal liabilities of the late ruler, but the subsequent accounts shew that they eventually cost the country about 87¾ lacs of rupees. The earliest efforts of the Commission were directed towards the discharge of the arrears of pay to public establishments, of which Rs. 8,82,000 were disbursed within the first year, and 25 lacs during the next nine ; but they do not appear to have been finally extinguished till 1857—8, a period of 26 years, during which the payments on this account amounted altogether to Rs. 35,90,000.

The liabilities of the deposed Maharaja were eventually liquidated after investigation by a special officer, Mr. (afterwards Sir) J. P. Grant, who was expressly commissioned for the purpose by the Supreme Government. The amount paid under the awards of his court, between the

years 1844 and 1850, amounted to Rs. 34,85,000 ; but during the 13 years preceding that settlement, while the country was recovering from the effects of past misgovernment, large sums continued to be paid to the Maharaja on account of his stipend of Rs. 3½ lacs per year, and the fifth share of the net revenue secured to him by treaty. Both payments averaged 11 lacs annually. The foregoing remarks refer to debts contracted before the British assumption of the government, which were dealt with by Mr. Grant's court. In 1863, however, the condition of the Maharaja's finances again attracted the attention of Government. Claims to the amount of 55½ lacs of rupees were pressing for settlement, and two officers,—Colonel C. Elliot, c. b., and Dr. J. Campbell, the Maharaja's Darbar Surgeon,—were appointed to the task of inquiring into and effecting a commutation of these liabilities. The amount paid in the years 1864—7 on this account amounted to Rs. 26,90,000. Finally, after the death of the Maharaja in March 1868, other debts incurred by His Highness since the year 1864 were commuted by payments in the years 1868—70, amounting to Rs. 12,76,000. Thus the gross amount paid from the Mysore revenues under authority of the British Government in liquidation of the late Maharaja's personal debts between the years 1844 and 1870 was 74½ lacs of rupees.

To return to the earlier accounts. In order to meet the liabilities of the State, the condition of the finances was such that it became necessary to obtain a loan from the British Government, in 1831—2 Rs. 2,50,000 ; in 1832—3 Rs. 10,00,000 ; in 1833—4 Rs. 9,78,202 ; and in 1834—5 Rs. 11,94,332 ; in all, Rs. 34,22,534. Owing to the heavy demands on the revenue on account of arrears due to establishments, it was not till 1837—8 that the first instalment of 3 lacs was repaid to the British Government. The subsequent payments were, 5 lacs in 1839—40, 3 lacs in each year from 1842—3 to 1844—5, 1½ lacs in 1845—6, and 2 lacs in 1846—7 ; making up Rs. 29,50,000. There was no further payment till 1849—50, mainly owing to the claims of the Maharaja's creditors, when the balance—Rs. 4,72,534—of the capital sum borrowed was liquidated. The interest account, made up at the rate of 5 per cent per annum to November 1851, was, however, still unredeemed. It left Rs. 16,98,261 due by the Mysore State, and that amount was paid by instalments between the years 1852—3 and 1855—6. The total of the capital amount borrowed from the British Government, with interest, was thus Rs. 51,20,795.

All the debts of the State having been liquidated, as well as those of the Maharaja which came within the scope of Mr. Grant's adjudication, the financial difficulties bequeathed to the British Administration by the Native Rule may be said to have been surmounted in the year 1856. The task involved an expenditure from the Mysore revenues, of rupees 87,73,261—or £ 877,326—during a period of 25 years. The multitude of taxes abolished or reduced down to the same period, aggregating 10½ lakhs of rupees annually, have previously been mentioned. Trade was thus set free and the revenue continued to rise.

State Revenue.—The State Revenue, as distinguished from Local and Municipal Funds, is now composed of the following items, under each of which the amount realized for the past ten years is entered :—

Year.	Land Revenue.	Forests.	Abkari.	Sayar.	Mohatarfa.	Salt.
1865—6 ...	Rs. 77,23,767	3,42,959	10,01,944	8,88,639	3,78,304	15,850
1866—7 ...	66,53,789	3,66,021	8,47,964	5,67,341	3,30,047	8,480
1867—8 ...	80,92,251	4,10,912	9,69,189	7,07,125	3,89,397	18,025
1868—9 ...	77,53,671	3,51,476	9,56,508	7,19,157	3,79,424	14,429
1869—70 ...	61,31,302	2,95,273	9,79,833	7,56,069	2,82,673	10,611
1870—1 ...	60,97,315	3,37,639	10,14,102	7,50,702	2,75,687	10,720
1871—2 ...	73,25,280	4,07,112	10,68,754	7,23,154	3,42,771	14,344
1872—3 ...	73,50,285	3,73,185	10,80,826	8,85,824	3,88,003	13,437
1873—4 ...	71,77,284	3,13,361	11,50,208	8,68,633	3,73,927	18,492
1874—5 ...	75,51,268	3,82,162	11,53,773	7,79,637	3,68,249	16,539

Year.	Stamps.	Post Office.	Law, Justice and Police.	Public Works Department.	Other items.
1865—6 ...	Rs. 2,61,583	37,021	91,687	70,663	1,02,214
1866—7 ...	2,76,381	33,308	91,303	42,590	91,762
1867—8 ...	3,15,157	39,001	1,15,972	36,450	96,552
1868—9 ...	3,71,943	37,620	91,077	74,726	1,28,238
1869—70 ...	4,22,250	34,497	1,15,219	82,514	1,41,903
1870—1 ...	2,92,975	41,720	2,64,199	65,597	1,36,556
1871—2 ...	1,97,233	44,368	3,40,360	15,268	1,42,793
1872—3 ...	1,88,243	44,873	4,14,397	11,077	2,43,514
1873—4 ...	1,92,585	43,666	4,15,754	50,037	1,39,881
1874—5 ...	2,02,384	49,749	4,24,265	48,901	1,70,456

The main source of revenue in Mysore is thus seen to be the land. But before specifying the amounts realized from various sources under this head, it is desirable to describe the existing tenures, and the system of land settlement.

The *land tenures* in the Province may be broadly divided into *Sar-kar* or Government lands, and *Inam* lands. Government lands are held under the ryotwari tenure, either on *kavaligam*, i. e., a fixed money assessment, or on *baligi*. Except in the settled taluks, where the term of the settlement is fixed at 30 years, *kandayam* lands are held on annual

leases or pattas, but the assessment is seldom altered and hardly ever raised. By far the larger portion of the land in the Province is held on this tenure. Under the batayi system, the land is held direct from Government, but the share of Government is paid in grain. The proportion generally claimed by Government is one-half, but it is probable that in reality only one-third is received, the remaining two-thirds being shared between the ryots and the village servants. The batayi tenure, though still greatly prevalent in the Nandilroog Division, will wholly cease and disappear with the completion of the Survey and Settlement in each taluk. In the mean time the ryots can always convert their occupation of batayi lands into that of the ordinary kandayam tenure if they please, and every encouragement to their so doing is afforded by the Government, which earnestly desires the entire abolition of the batayi tenure.

In the case of private estates, such as inam and kayamgutta villages, and large farms of Government lands cultivated by payakaris or under-tenants, the land is held on the following tenures :—

1st. *Vāram*, under which an equal division of produce is made between the landlord and the tenant, the former paying the assessment of the land to the Government. 2nd. *Mukkupye*, under which two-thirds of the produce go to the cultivator, and one-third to the landlord, who pays the assessment of the land. 3rd. *Arakandāya* or *ekaturbhūga*, under which the landlord gets one-fourth of the produce and pays only a half of the Government revenue, the remaining half being discharged by the cultivator, who enjoys as his share three-fourths of the produce. 4th. *Wolukandāya*, in which the tenant pays a fixed money rate to the landlord. This may either be equal to or more than the assessment of the land.

An hereditary right of occupation is attached to all kandayam lands. As long as the pattaḍar pays the Government dues he has no fear of displacement, and virtually possesses an absolute tenant right as distinct from that of proprietorship. When the Government finds it necessary to assume the land occupied by him for public purposes, he is always paid compensation, fixed either by mutual consent or under the Land Acquisition Act.

Vargs.—In the Malnad or hilly taluks of the Nagar Division, situated on the plateaux of the Western Ghats, the holdings of the ryots are called vargs. The varg consists of all the fields held by one vargḍar or farmer, and these are seldom located together, but are generally found scattered in differ-

1868 and sometimes in different taluks. When closely examined, the

warg means nothing more than a patta or deed covering the different lands held by one proprietor in one or more villages. The warg system does not appear to be of old origin, and is said to have come into existence on the assumption of the management of the country by British Officers in 1831, when the Superintendent, anxious to procure an accurate record of each man's holding, directed a Pahani account to be framed, and the holding of each man to be therein shewn, with its reputed extent and assessment. This precaution was necessary considering the topographical peculiarities of this portion of the Province, consisting of hill and dale covered with jungle, and not unfrequently inaccessible. The rule now is that no one is allowed to relinquish or apply for a portion of the warg unless the whole of it is resigned or taken up, but the new Survey Department is breaking down the old system, and in settled taluks the extent and assessment of each field forming the warg is defined, so as to afford the usual facilities to the ryot for retaining and resigning as much as he cannot cultivate, provided that whole fields or numbers only are relinquished.

Hankalu and Hadya lands.—Attached to each warg are tracts of land called hankalu and hadya, for which no assessment is paid, but which are said to be included in the warg to which they are attached. The hankalu, like the banes in Coorg, are set apart for grazing purposes, but have of late also been used for dry cultivation. The hadya are lands covered with low brushwood and small trees, from which firewood and leaves, &c., are taken for manuring the fields of the warg.

Tattina Hankalu.—In the Malnad, to each gadde or wet field are attached tracts of dry land, called tattina hankalu, for which no assessment is paid, but which are said to be included in the assessment on the wet field.

Kans.—These are large tracts of forest, extending in one case over eight miles in length, for which a cess called kan khist is paid. The kans are preserved for the sake of the wild pepper-vines, lagni palms, and certain gum trees that grow in them, and also to enable the wargdars to obtain wood for agricultural and domestic purposes. The privilege of cutting wood in them, formerly allowed to ryots, has after much discussion been withdrawn, and the holders of kans are allowed only to enjoy the produce above mentioned, to clear the undergrowth and clip trees where necessary for the growth of the pepper-vine and also for manuring purposes. It is under contemplation whether the usufruct of kans should not be leased out as in Canara, the Government reserving all rights over the live timber of all kinds.

Kumri.—This is a system of cultivation almost peculiar to the hill tribes. Soon after the rains, they fell the trees on a forest site, a hill side being preferred. The trees are left lying till January and then set on fire. The

ground is afterwards partially cleared, dug up, and sown towards the end of the rains with ragi, castor-oil nut, and other dry grains. In the first year the return is prodigious, but it falls off by one half in the second year, and the place is then abandoned till the wood has again grown up. Strong fences are made to keep off wild beasts, and for a month before harvest the crop is watched at night by a person on a raised platform. No doubt *kumri* cultivation thus carried on involves great waste of timber, but if it is restricted to undergrowth it is not so wasteful.

Coffee lands.—Grants of land for coffee cultivation are made out of the Government jungles, chiefly in the Western Ghats, forming the Nagar and Ashtagram Malnad. On receipt of applications for a plot of such land, its area is ascertained by a rough survey, the boundaries defined, and then it is sold by public auction. The successful bidder is granted a *patta* or title-deed. The clauses of the coffee *patta* or title-deed transcribed below shew on what tenure land for coffee cultivation is now held by the planter.

“These lands are granted to you for the purpose of planting coffee, and should you raise any other crop upon them, lands thus appropriated will be liable to assessment according to the prevailing rates in the taluk. By this, however, it is not intended that plantains, castor oil plants, or fruit trees, planted for the *bona fide* purposes of affording shelter or shade to the coffee, should be liable to taxation.—On the coffee trees coming into bearing, you are to pay Government an excise duty or *halat* of 4 annas on every maund which is produced. This is in substitution of the ancient *wira*. This taxation is subject to such revision as the Government of Mysore may at any time deem expedient.—For every acre of land which you take up under this *patta*, you must within a period of five years plant a minimum average number to the whole holding of 500 coffee trees to the acre. The Government reserves to itself the right of summarily resuming the whole or any uncultivated portion of the land mentioned in your *patta* should you not conform to this condition.—You are exempt from the visits of all jungle and petty *Izardars*, who will be prohibited from entering hereafter lands taken up for coffee cultivation, and you are empowered to fell and clear away the jungle, but previous to doing so, you are bound to give six months notice to the Sarkar authorities, to enable them to remove or dispose of all reserved trees which may exist on the holding.—Should you wish to sell or alienate in any way the lands mentioned in this *patta*, you must notify the same to the Commissioner of the Division, and this *patta* must be forwarded for registration under the name of the new incumbent. Any attempt at evading the *halat* will involve confiscation of the article itself, together with a fine of twice the amount of *halat* leviable upon it.

Cardamom lands.—Lands for the cultivation of cardamom are granted

from the jungles on the east side of the Western Ghats, where this plant grows spontaneously. In these jungles are also to be found lac, resin, beeswax, gums, pepper and similar other articles. The farms were formerly leased out, the limits of the tract being annually defined; but to afford every facility to the planter, and to encourage the cultivation of the cardamoms, rules have recently been framed, under which those planters who are desirous of embarking on cardamom cultivation can obtain land for the purpose on more liberal and advantageous terms. Under these rules, grants of land not exceeding 200 acres, nor less than 10 acres, and well defined by natural features, can, after being put up to auction, be secured by planters on 20 year leases: the lessee binding himself to pay the actual cost of survey and demarcation at once, and the auction price by twenty instalments. At the expiration of the lease, should the lessee be desirous of renewing it, he is allowed to do so on terms fixed by Government, and in the event of his declining to renew, he is paid compensation for improvements from any surplus on the resale of the land realized by Government. The lessee pays a halat or excise duty of two rupees per maund of 28lbs on the cardamoms produced by him, and as the land is granted solely for the cultivation of cardamoms, the rules provide that if any portion of it is cultivated with any other description of crop, such land will be assessed at the prevailing rates. The lessee is, however, allowed to make use of minor forest produce, and to fell trees (with the exception of the ten reserved kinds) in order to facilitate the growth of his cardamoms. On the other hand he binds himself to plant not less than 500 cardamom plants per acre on his land by the expiration of five years from the date of his grant.

Kayamgutta.—This term, in its literal sense, describes a permanent village settlement, and it probably owes its origin to a time when many villages were depopulated, and when the Government found it advantageous to rent out such on a fixed but very moderate lease, the renter undertaking to restore them to their former prosperous condition. These tenures were also largely added to during the late Maharaja's direct administration of the country, when in several cases flourishing villages were given to favourites at Court. The *kayamgutta* lands comprise some of the most valuable inam lands in the Province.

Shraya—or lands granted on progressive rent. Waste lands, chiefly in jungly districts, were granted free of assessment, at $\frac{1}{4}$ rates for the first year, and afterwards increasing yearly till the 4th or 5th year, when the full assessment is attained. Under the advantages afforded by this tenure, large tracts of land have been brought under cultivation and many villages established.

Inam Tenures.—The following are the inam tenures in Mysore :—

Sarvamānya, villages or lands held free of all demands, including *sayar mohatarfa*, &c.

Ardhamānya, *Ardhayaśi*, or land assessed at half the usual rate. This proportion is not however maintained, the share of the Government varying in some cases from $\frac{1}{10}$ th to $\frac{1}{2}$ ths.

Jodi villages, or lands granted and held on a light assessment, the proportion of which to the full rates varies.

Jodi Agrahars.—These are ordinarily whole villages, held by Brahmans only, on a favourable tenure; but in some cases the agrahars merely consist of selected streets in Government villages, to which patches of cultivation, generally leased out by the Brahman agrahardars, are attached.

Shal or *Mahal Jodi*.—These inams appear to have come into existence during the loose fiscal administration of the Maharaja's time. Their holders claim to be in the position of holders of kayangutta villages, but as they derive their grants from incompetent local revenue officers, they stand on a different footing, and in this view the Inam Department has been directed to confirm only those Mahai Jodi inams for which valid proofs of alienation are adduced.

Bhātamānya or *Draṁmānya*.—These terms are used to designate grants and endowments of land held by Brahmans for their support, which are personal grants as distinguished from those held on conditions of service.

Devādāya and *Dharmādāya*.—Are grants made for the support of religious and charitable institutions, and persons rendering services therein.

Umbli, *Uttār*.—These terms are used, chiefly in the Nagar Division, to signify lands held by village servants on condition of service, subject generally to the payment of a jodi.

Shist and *Kutugali lands*.—These are also held by village servants, and descendants of the holders of the defunct service of Deshpande, Kulkarni and Nadiga, on a jodi, which is in fact the old Sivappa Nayak's shist or assessment without the patti or subsequent imposition.

Koligi Inams.—Represent land granted free of tax, or on a light assessment, in consideration of services rendered in the construction or restoration of tanks, or on condition of their being maintained in good repair. But as the repair of such tanks was almost universally neglected by the inamdars, they have been relieved of the duty, and the following rules lately adopted for enfranchisement of the inams, the quit rent being credited to the irrigation fund for up-keep of the tanks. i. Inams granted to private individuals for the construction and up-keep of tanks, are enfranchised on $\frac{1}{2}$ quit rent if the conditions are certified by the chief Revenue Officer of the District to have been fairly observed and the tanks to be in use; otherwise at $\frac{1}{2}$ quit rent. ii. Inams granted to private individuals for the up-keep of Government tanks, are enfranchised on $\frac{1}{2}$ quit rent if certified to as above; otherwise they

are confirmed to the present holders on $\frac{1}{2}$ assessment for life, and afterwards brought under full assessment. iii. Kodigi inams in rent-free villages, as also in jodi or quit rent villages, when their up keep rests with the jodidars, are confirmed on the existing conditions, subject to regulations for the proper maintenance of the tanks.

Báradí Dasaronda Inams.—Are inams granted for the digging and up keep of wells, chiefly in some of the taluks of the Kolar District. Formerly $\frac{1}{10}$ of the produce of the lands thereby irrigated was paid to the constructor of a well, as well as his remuneration. But this proportion is not strictly kept up in practice.

Kerebandi and Kerekulaga Inams.—These inams were granted for the annual petty repairs of tanks. As however the system was found practically useless, and the inamdars invariably neglected their obligations, such inams are confirmed to the present holders on $\frac{1}{2}$ assessment for life, and on their death brought under full assessment.

Pattagaddes.—These are patches of lands held by the ryots of one village in another, not as paya karis (foreign cultivators) but as a part and portion of their own village. These pattagaddes are distinguished by separate boundary marks from the other lands of the village in which they are situated. The origin of these tenures is traceable to certain mutual agreements between the cultivators of adjoining villages, to allow those of one to cultivate portions of wet lands under the tank of another constructed by the joint labour of all. The tenure may also be in part due to an exchange of land, by which ryots who had no wet land in their own village became entitled to a portion of the wet land in another.

Such are the principal land tenures in Mysore. By far the most common of these is the ordinary kamlayam, or ryotwari tenure. The main distinction is between ryotwari and inam land. Each of these descriptions of land is now being settled on a permanent basis, by the Revenue Survey and Settlement Department, and the Inam Department.

Revenue Survey and Settlement.—Immediately after the conquest of the country, a general topographical survey was made by Colonel Mackenzie, subsequently Surveyor General of India. While Purnaiya was Divan, a revenue survey was made, but it was necessarily very imperfect at the time, and after the lapse of fifty years the records had become extremely defective, advantage being taken of the insurrection to destroy the survey papers pretty generally. Though nothing was subsequently done in the way of any general measure, a good deal was effected by measurements of particular lands to check the shanbhogs

in their attempts to falsify the records. Sir Mark Cubbon was, however, fully alive to the value of a thoroughly scientific Revenue Survey and Assessment, and expressed his intention, if the financial state of the country continued to prosper, to propose its being carried out. In July 1862 the more glaring defects apparent in the existing revenue system were stated in some detail to the Government of India. A brief inquiry had elicited proof of the existence of so much discrepancy and fraud, that the Superintendents were called on to report upon the classification of soils in their respective Districts, and on the prevailing rates of assessment.

In one taluk of the late Bangalore Division, there were reported to be 596 rates of assessment on dry land per kudu, which is 3,200 square yards, or about $\frac{3}{4}$ of an acre, these rates being fixed on a progressive scale ranging from 1 vis = 1 anna 9 pie, to 3 pagodas 2 fanams = 10 Rs. 1 anna per kudu, or from $3\frac{1}{2}$ d to £ 1—6—10 per acre, distributed over 26 classes of land. For wet and garden land, the results, though less striking, were also remarkable, in one case the number of rates being 81, and in the other 451, on the kudu of 500 square yards.—In Chitaldroog, the assessments were nearly as complicated. The kudu is generally of the same extent as in other parts of the Province, viz. 3,200 square yards on dry lands, and upon it the rates were 465 in number, with a minimum of 1 anna and a maximum of Rs. 9—4—11.—In parts of Ashtagram, the assessment was theoretically based on Purnaiya's survey, but in fact, few traces were left of this, and its principles were unknown, the practical consequence being that people paid generally what their forefathers did, without much interference in time-honoured abuses.—In the Nagar Division, owing to the hilly nature of the country, and to its having been ruled for centuries by quasi independent chiefs, the character of the landed tenure presented a notable contrast to that which prevailed in the rest of the Province; but scarcely more uniformity was to be found in the rates of the assessment, or in the classification of the soil, than in the other Divisions, as in one hill taluk, taken at random apparently, there were 147 rates on wet land, varying in rentals of from nearly Rs. 34 to a little more than 1 rupee per khandi, i. e., from about Rs. 16 $\frac{1}{2}$ to 7 $\frac{2}{3}$ ds annas per acre. In the plain taluks of the District, less discrepancy existed in the rates of assessment, but some of them were enormously high, and in numerous instances the returns shewed great deviations from the rates which formerly existed.

In consequence of this capricious and intricate system of assessment, all real power had passed into the hands of the shanbhogs, or hereditary village accountants, the recognized custodians of the records relating to the measurement and assessment of lands; and as no permanent boundary marks had ever been erected, it rested with them to regulate at will every ryot's pay

ments. On the better classes of land, the rates in some cases were so preposterously high, as to make it certain that unless a man so assessed held considerably more land than was entered against him, he could not possibly pay the Government demand; while on the other hand, much land capable of being profitably cultivated under a moderate assessment was thrown up, because the lighter rates had been fraudulently shifted to superior lands held by public servants and others who could afford to bribe the shanbhogs.

In addition to the discrepancies in the rate of assessment, another fertile source of embarrassment existed in the prevalence of the *balayi* system, and the unsatisfactory state of the inam holdings, regarding which it was notorious that from the absence of any adequate check on unauthorized occupancy extensive frauds had been practised.

The Supreme Government fully recognized, as the only effectual remedy for the evils pointed out, the advisability of introducing a Revenue Survey and Settlement, accompanied *pari passu* by an equitable and low assessment, such as had given so beneficial an impetus to some of the Districts of Madras and Bombay; and it was subsequently decided to adopt the Bombay Revenue Survey system, which had been proved incontestably by figures, and by the well known satisfaction of the ryots, to be successful in the Districts of that Presidency bordering on Mysore.

My reason, writes Mr. Bowring, for preferring the system of survey and settlement pursued in Bombay may be summed up thus. I found that in Mysore, which borders both on that Presidency and on Madras, we had ample opportunity of comparing the method pursued in either case. The difference is as follows. Under the Bombay system, the survey, classification and settlement are all continuous links of one chain, forged under the directions of the same individual, whose interest it is to see that every successive link fits closely into its predecessor, every step being also carefully taken with advertence to the next one. There is no such close connection in the Madras system. The boundaries are fixed by one person, the survey laid down by another, and the settlement by a third, these several agencies not being under one responsible head. The survey, so far as I can judge, is excellent, but the surveyor had not the power of altering boundaries if incorrect. On the completion of the survey, the work was taken up by the Settlement Officer.

In introducing the survey and settlement into any taluk, the first steps taken are the division of the village lands into fields, the definition of the limits of such fields by permanent marks, and the accurate measurement of the area of each field in itself, by chain and cross staff. In the division of the lands into fields, the points kept in view are:—1st.

That the fields, or at least a majority of them, should not be larger than may be cultivated by ryots of limited means. 2nd. That they should not be made smaller than is necessary for the above object without an adequate reason. The former of these points is determined by the extent of land capable of being cultivated by a pair of bullocks, which area varies according to climate, soil, description of cultivation and methods of husbandry. In the second case, when a holding is of small area, contiguous small holdings are clubbed to bring the area within the limit. The marks used for defining the limits of fields, laid out as above, are rectangular mounds of earth (popularly known as *bāndhs*) at the four corners and at intervals along the side. The protraction on paper of the survey made of the village lands by cross staff, theodolite and chain, constitute the village maps, which afford the most minute information as to the position, size and limits of fields, roads, water-courses, &c., comprised within each village, while they possess a degree of accuracy sufficient to admit of their being united so as to form a general map of a taluk or District, exhibiting the relative positions and extent of villages, topographical features of the country, and a variety of other information of use to the local revenue and judicial officers.

The next step towards the settlement of the taluk is the classification of the land, with the object of determining the relative values of the fields into which the land is divided. For this purpose, every variety of soil is referred to one of nine classes, such classes having a relative value in annas or sixteenths of a rupee, and this division of classes experience has proved to afford a sufficiently minute classification for all practical purposes. All land is divided into dry-crop, wet and garden-land, but in the two latter, in addition to soil classification, the water-supply is taken into consideration, and its permanency or otherwise regulates the class to which it is referred, the soil and water class conjointly afford an index to the value of the field. In the case of gardens which are irrigated by wells, in addition to the classification of soil, the supply, depth, and quantity of water in the wells, the area of land under each, and the distance of the garden from the village, as affecting the cost of manuring, &c., is carefully ascertained. The whole of the fields into which each village has been broken up being thus classified, the taluk is ready for settlement.

In this last proceeding, the first question taken into consideration is the extent of territory for which a uniform standard of assessment should

be fixed. Among the most important influences admitted into the consideration of this point are, climate, position with respect to markets, communications, and the agricultural skill and actual condition of the cultivators. The villages of the taluk having been divided into groups, according to their respective advantages of climate, markets, &c.; and the relative values of the fields of each village having been determined from the classification of the soils, command of water for irrigation, or other extrinsic circumstances; it only remains to complete the settlement by fixing the maximum rate to be levied on each description of cultivation, together with the absolute amount of assessment to be levied from the whole.

The determination of this point, involving the exercise of great judgment and discrimination, is arrived at by a clear understanding of the nature and effects of the past management of the taluk for twenty years, and by examination and comparison of the annual settlements of previous years. The maximum rates having been fixed, the inferior rates are at once deducible from the relative values laid down in the classification scales, and the rates so determined are applied to all descriptions of land. When the calculation of the assessment from these is completed, field registers, embodying the results of the survey, are prepared for each village separately, for the use of the revenue authorities. The registers and the village maps form a complete record of the survey operations; as long as these and the field boundaries exist, all important data resulting from the survey will be preserved.

The survey rules, and the guarantee which has been formally notified, while securing the just rights of the State in clear and unequivocal terms, also define those possessed by the ryot in the land. The benefits of the improvements he makes to the land are left to him exclusively during the present lease, which extends over a period of thirty years; and it has been announced that at the next revision the assessment will not be revised with reference to the improvements made at the ryot's cost, but according to the progress of natural events, the benefits of which the Government have a right to share equally with the ryot.

The Survey and Settlement Department in Mysore is further entrusted with the important and arduous duty of revising and settling the village service emoluments. It assumes great importance owing to the necessity of providing sufficient remuneration for the patels in connection with the organization of the Village Police. At present the remunera-

tion of all classes of village servants is very uneven. Under the Survey Settlement the *áya* payments, that is to say the fees realized by patels and shanbhogs in the shape of grain paid to them direct by the ryots, have been abolished, and a scale of remuneration has been fixed in the shape of money payments in the surveyed taluks. The *áya* payments, from which the ryot has thus been relieved, are included in the land assessment he has to pay to Government.

The progress of the operations of the Survey Department, up to the close of the working season of 1875, under the several heads of survey, classing, and assessment, for the 68 taluks which are comprised in the Province, is as follows:—Surveyed, classified and assessed 16; surveyed and classified 5; under classification 4; partly surveyed, classified and settled 1; completely surveyed 2; survey in progress 11; neither survey nor classification completed 1; not touched by the Survey Department 28.

The survey commenced in the north, in Chitaldroog District, and is working westwards and southwards. The Department is controlled by a Commissioner, under whom are a Superintendent, a Deputy Superintendent, and 14 Assistant Superintendents. The following gives in detail the total area measured, classed, &c., from the commencement of the survey operations up to the close of the year 1875.

Year.	Acres measured.	Acres classified.	Cost per acre of both operations.		Years.	Acres measured.	Acres classified.	Cost per acre of both operations.	
			As.	P.				As.	P.
1863—4...	291,595	200,176	3	2·7	1869—70...	1,015,756	526,567	3	9·6
1864—5...	507,288	248,244	2	9·5	1870—1...	972,819	998,142	3	6·5
1865—6...	817,304	454,020	2	4·0	1871—2...	1,081,163	658,005	3	10·5
1866—7...	743,041	473,996	2	8·7	1872—3...	943,655	1,051,076	4	3·8
1867—8...	789,780	689,521	2	9·9	1873—4...	831,191	696,933	5	3·5
1868—9...	995,428	680,645	3	2·6	1874—5...	933,893	762,653	5	1·8
Total... ..						9,922,913	7,420,578		

Inam Department.—The inams in the Province may all be referred to one of three epochs, and the statement below shews the value of the inams which have sprung up during each of these periods.

Period of Inams.	Whole Villages.		Minor Inams.	
	Valuation.	Jodi or light assessment.	Valuation.	Jodi or light assessment.
To the termination of Divan Purnaiya's administration in 1810.	2,86,038	1,32,150	4,99,528	1,48,134
Granted during the Maharaja's administration, 1811 to 1831.	3,19,167	62,435	35,025	...
Granted by the Chief Commissioner of Mysore.	...	...	18,500	8,000
Sthal or unauthorized inams	...	...	63,616	17,946
Total Rs.	6,05,205	1,94,585	6,16,669	1,74,080

After the fall of Seringapatam in 1799, the British Commissioners directed Purnaiya plainly that no alienation of land should be made without the Resident's approbation. This salutary advice was fairly acted on by the Divan during his long and successful administration. The alienations between 1799 and 1811, (when the Raja assumed the government of the country) were in reality few and unfrequent, and the inams which are entered as having been created during Purnaiya's administration, are (with the exception of his own jaghir) chiefly those which had been sequestrated during the Muhammadan usurpation, and which on the re-establishment of Hindu rule it was thought proper to restore. But this measure being accompanied with an increase of the jodi on such inams, the alienation of revenue in the fresh grants was counter-balanced. From 1810 to 1831, when the British Government interfered to save the country from ruin, the Raja recklessly alienated lands, some of them forming the best villages in the country, besides confirming others on permanent or kayamgutta tenure, while his loose system of administration afforded his subordinate officers opportunities for alienating land without proper authority. The third epoch dates from the commencement of the present administration in 1831. The grants made during this period are comparatively of small value, and are held on condition of service, consisting in the upkeep of chatrams, maintenance of groves, tanks and avenue trees. In addition to the above, the statement shews a considerable number of sthal inams, or as they are sometimes termed chor inams. Under this head are comprised all such inams as, although enjoyed for some time, have not been properly registered as granted by competent authority.

The necessity of a searching investigation into the inam tenures of the Province, with the view of securing those inams which had been granted by competent authority to their possessors on a permanent basis, very early attracted the attention of the British Government; but it was not until 1863 that any definite scheme for this purpose was mooted. It was then found that the operations of the Revenue Survey and Settlement Department created alarm and evoked opposition among the inamdars, and it was thought advisable that rules for the confirmation of inams on a liberal principle should be drawn up. After much discussion, it was decided to adopt the principles which had after long deliberation been decided on in the Madras Presidency. In one important respect, however, these principles were departed from. The Inam

Commissioner was constituted the final judicial authority, and his decision was not, as in Madras, made liable to be reversed by a Civil Court. But after the transfer of the Inam Commissioner's duties to the Survey and Settlement Commissioner, this provision was altered, and the Madras system, with one exception, which will be noticed below, prevails in its integrity. The Inam Rules for Mysore were sanctioned by the Government of India in April 1868. These rules, based on the theory of the reversionary right of Government, are so framed as to meet the several descriptions of inam lands existing in the Province, testing their validity—1st, by the competency of the grantor, irrespectively of the duration of the inam, whether 50 or less than 50 years old; 2nd, by the duration of the inam for 50 or more than 50 years, irrespectively of the competence or otherwise of the grantor.

The following are the principles on which the settlement is conducted:—

i. When sannads have been granted by the late Maharaja or by his predecessors, and when they convey full powers of alienation and are hereditary, the inams are treated as heritable and alienable property.

ii. When sannads emanating as above do not convey full powers of alienation, the inams may be enfranchised by payment of a quit-rent equal to one-eighth of the assessment of the tenure, except in the case of inams granted for the performance of religious, charitable and village service, which is still required to be rendered.

iii. When sannads have been granted by incompetent persons, and when they are less than 50 years old, a compulsory quit-rent, equal to one-half of the assessment, is imposed. But in doubtful cases, and where there is a probability that the inam has been enjoyed for fully 50 years, the quit-rent to be imposed is one-fourth of the assessment.

At the time of its first organization in 1866, the Inam Commission was composed of an Inam Commissioner, one Special Assistant, and three Assistants. These officers were at first invested with judicial powers. But at the commencement of the year 1872—73, the Department was reorganized. The control of its proceedings was then transferred to the Survey Commissioner, while the settlement is carried on, under his direction, by an officer styled Superintendent of Inam Settlements, aided by three Assistants, on whom devolves the preliminary work of registering the inams, taluk by taluk, and of collecting all the material for settlements. Under this scheme, the judicial powers hitherto exercised by Inam officers were withdrawn, and claims *inter partes* are referred to the regularly constituted civil courts. In other respects

the rules of settlement remain the same as before, except in the case of whole inam villages. Up to 1872, the determination of the extent and value of inam villages for purposes of enfranchisement was based upon the Malras system of procedure, which is very liberal. Under this system, the Inam Department does not profess to estimate the acreage of inams. Unless the terms of the sannad make it perfectly clear that the Government only intended to assign a certain number of acres, and was deceived as to the extent of the village, the mere fact that the number of acres enjoyed by an inamdars exceeded the number entered in his sannad, was not allowed to operate prejudicially to him. As regards valuation, the old assessment recorded in Purnaiya's Jári Inamti accounts was adopted, with such additions as were deemed suitable or equitable on account of the right of the State to prospective cultivation of waste lands ; and Purnaiya's old valuation was adopted when the accounts of present rental furnished by the inamdars fell short of it or could not be relied upon.

But in 1872, upon a representation of the Survey and Settlement Commissioner that the course above described, based upon imperfect data, would be too liberal to the inamdars, and injurious to the Government in not securing the full amount of quit-rent and local fund cesses, a survey of whole inam villages, with a view to ascertain their correct valuation, was sanctioned by the Chief Commissioner for purposes of the inam settlement. And as the survey could not keep pace with the inam inquiry, which has already out-stepped the survey, a system of charging *ad interim* quit-rent, upon the best data now forthcoming, was devised, on the understanding that this settlement was to be merely temporary, and to last only until the land was valued by the Survey and Settlement Department.

The following statement shews the value of minor inams of different descriptions at the time that their investigation and registration were commenced by the Inam Department in 1868.

Granted ...	...	Up to Divan Purnaiya's resignation, 1810.	By the Maharaja.	By the Chief Commissioner.	Total.
Nagal Muzrayi.	Rs.	1,42,115 2 4	1,40,234 7 7	19,678 4 7	3,02,027 14 7

Muzráyi Department.—A question of almost equal importance to that of inam holdings in land, is the settlement of the money grants

made at various periods to numerous institutions and individuals for services or otherwise. After the assumption of the country in 1831, the management of these funds and the up-keep of the institutions were vested in the Superintendents and their subordinate district officers. In 1852, Sir Mark Cubbon, the then Commissioner, took the administration of the Muzrayi Department into his own hands, and on his departure in 1861 it again devolved on the Superintendents. In 1866 the Government of India observed, that although the peculiar circumstances under which Mysore was administered might render it necessary that certain classes of acts should be performed which would not be thought of in a purely British Province, yet where such acts were connected with idolatrous buildings and practices, there seemed no reason why any Christian officer of the Government, or indeed any Government officer as such, should be called on to perform them. Accordingly in 1867 the Muzrayi Department was finally placed in charge of a Native Assistant in each District, he being styled the District Muzrayi Officer. This arrangement is still in force.

The orders passed by the Muzrayi Officer are subject to appeal to the Deputy Commissioner and Commissioner, and finally to the Chief Commissioner. The accounts, &c., are submitted to the Chief Commissioner's Huzur Daftar Department, where they are checked and examined.*

Land Revenue.—The land revenue, as already stated, is realized either from a direct money assessment or from a division of the crop

* The total income of the Muzrayi Department for 1874—75, including balance of previous years, amounted to Rs. 4,72,103, and the total expenditure to Rs. 3,67,177, leaving a balance of Rs. 1,04,929. The following are details of the income for 1875—6:—

Institutions.	No.	Government allowance.		Private contributions.	Total.
		Money.	Land.		
Devasthans	1,280	1,08,342	76,638	24,336	2,09,316
Chatrams	77	57,078	...	1,829	58,907
Maths	30	51,560	14,602	1,578	67,740
Dargahs	6	4,839	70	47	4,956
Masjids	6	2,793	58	60	2,911
Langarkhāna	1	1,800	36	...	1,836
Miscellaneous	...	16,081	3,444	1,109	20,634
Total Rs.		2,42,493	94,843	28,959	3,66,300

The Pudukat funds of Devasthanams amounted to Rs. 42,780. They are classed under four heads:—1. Sums deposited by private individuals, in trust with the temple manager or guardian, on condition of the interest being devoted to a special object or service, the disposal of the principal being left to the discretion of the manager. 2. Sums lent by one individual to another with the stipulation that the interest shall be paid to a temple. 3. Voluntary agreements entered into by private individuals to pay to a temple the interest accruing on certain sums assigned for the purpose, but retained in their own hands. 4. Savings from the Government allowances or Tashik, lent out on interest by the temple managers for the benefit of the institution.

under the batayi system, which is being gradually converted into the former. In 1870, with the view of affording relief to the ryots by enabling them to bring the bulk of their produce to market before meeting the Government demand, the instalments were made payable at the subjoined rates and periods :—

Districts.				Dec.	Jan.	Feb.	Mar.	Apl.	May.
Bangalore, Kolar, and Chitaldroog	Annas.	...	...	...	2	3	4	4	3
Tumkur ...	...	...	...	2	3	4	4	3	...
Mysore ...	...	...	...	2	4	6	4	...	...
Hassan ...	...	...	...	...	3	5	5	3	...
Shimoga and Kadur, Maidan ...	...	...	...	...	...	2	6	6	2
„ Mainad ...	...	...	...	...	...	2	4	6	4

But it was found that the indulgence was abused by the improvidence of the cultivators, and the collection of revenue was attended with great difficulty after they had disposed of their crops. The khists were therefore in 1874 reduced to four, and the collection period or revenue year made conterminous with the official year, which ends 31st March. Under this arrangement the payments are :—

Dec. 2 annas, Jan. 6 annas, Feb. 6 annas, Mar. 2 annas.

except in Mysore District, where the rates first given are retained.

The following figures shew the amounts obtained from direct assessment and from batayi for five years past :—

	Money Assessment.	Batayi.
1871—2	Rs. 70,50,091	1,13,942
1872—3	70,41,633	1,67,820
1873—4	70,90,151	87,133
1874—5	72,04,720	1,46,548
1875—6	73,18,641	58,584

The various sources of land revenue, with the proportion contributed by each towards the sum of the collections under this head for the same period, are as follows:—dry land, 30 to 31 lacs of rupees ; wet land, 23 to 23½ lacs ; garden land, 10 to 10¾ lacs ; sugar cane, 1½ lacs ; mulberry, ½ a lac ; coffee halat, ¾ lac ; pasture lands, 1 to 1¼ lac ; kayamgutta villages 62,000 ; jodi and whole inam villages, nearly 1½ lac ; inam jodi and minor inams, 2 to 1¾ lacs ; sale proceeds of Government land, 4,000 to 7,000 ; miscellaneous, 1 to 1½ lac.

Of the wet land, during the past three years, fields irrigated with river water yielded 3 to 3½ lacs of rupees ; with tank water, 12 to 13½ lacs ; with rain water, 5½ to 5¾ lacs ; by means of buckets, 62,000 ; by lever, 3,500 ; by wells, 60 ; from jungle streams, 32,500 to 33,250 ; from

talpargi or spring heads, 12,000 ; from katte hole or dams across small streams, 6,600 ; marshy lands, nearly 32,000.

The following are the productions of garden lands, and the revenue obtained from each for three years past. Areca nut, $2\frac{3}{4}$ lacs of rupees ; cocoa nut, $1\frac{1}{4}$ lac ; areca and cocoa nut mixed, almost 4 lacs ; tari fasal, consisting of ragi, &c., 89,000 ; plantain, 9,000 ; betel leaf, 28,000 ; vegetables, $1\frac{1}{2}$ lac.

Coffee halat.—It is known that very early in the present century Mysore-grown coffee was offered for sale in the bazaars, and the cultivation was general to a small extent in many portions of the western districts. In accordance with the invariable custom of the country, the right of the State to half the produce was always acknowledged by the cultivators, and enforced by the Native Government. In 1823, the late Maharaja rented the Government half share to a Madras firm (Messrs. Parry & Co.) for ten years, for the annual sum of Rs. 4,270, and the contract was renewed at the end of this period for a further term of five years, at an annual payment of Rs. 7,472. After the assumption of the Government by the British, the question of encouraging the cultivation of coffee, by commuting the váram or half share for either a moderate excise duty or a light assessment on the land itself, formed the subject of correspondence. Eventually, in 1838—9, Sir Mark Cubbon, regarding the question of an increased revenue as quite subordinate to the extension of coffee cultivation, sanctioned the adoption of a halat or excise tax of R. 1 per maund (Rs. 4 per cwt.) on all coffee grown in Mysore : a duty which at the then price of coffee, Rs. 4 per maund, was equivalent to 25 per cent in lieu of the old váram or Government half share of the produce. In 1843—4, in consideration of the disadvantages under which Mysore coffee entered the general market, the rate was reduced to 8 annas a maund. In 1849—50, in consequence of the heavy fall in the price of the article which had taken place during the previous ten years (coffee being then reported to be selling at little over R. 1 a maund, though it had been sold at upwards of Rs. 4 a maund in 1839—40, and as high as Rs. 6 or 7 five years earlier), the halat was still further reduced to 4 annas a maund. At this rate it has remained ever since. Taking a fair average crop of coffee at 4 cwts. per acre, and putting the price at Rs. 5 per cwt., the tax of 4 annas a maund, at the time of its imposition, represented a land rate of Rs. 4 per acre, or an excise tax of 20 per cent of the produce in lieu of the

old Government share of 50 per cent. In 1864, the Mysore Planters Association presented a memorial for a reduction of the halat, stating that the tax amounted to Rs. 6 per acre on their coffee lands. Mr. Bowring estimated that at the then price of coffee (Rs. 5 per maund), the halat of 4 annas a maund or 5 per cent was neither oppressive nor repressive, but was willing to reduce it to 3 annas a maund. The Government of India agreed to this if an acreage of 8 annas were paid in addition. But as a survey of the lands could not then be made for the purpose, the halat remained unchanged. The Association next memorialized the Secretary of State, who declined to interfere.

The relative merits of the halat or of an acreage have been constant subjects of discussion for the past 20 years. In 1854 it was found that owing to the halat system placing the tax upon the crop instead of upon the land, large tracts of forest were taken up nominally for coffee cultivation by people who had neither the intention nor the means to cultivate it properly, and that owing to the inferior system of management on native estates the yield was often not more than 5 maunds or $1\frac{1}{4}$ cwt. per acre. As a remedy for these abuses, a land rate was proposed, which Sir Mark Cubbon considered should be fixed at the equivalent of one third of the gross produce, but he was averse to the change. In 1860, however, he issued rules for the more close supervision of coffee cultivation, as, though the area of estates was largely increasing, the halat or excise collections remained stationary. He at the same time prescribed the present form of coffee patta, and retained the clause providing for resumption unless a certain proportion of every estate was planted up within a reasonable time, as he considered it "the only measure for checking the tendency which exists, especially in the case of European planters, to obtain a vast extent of land which they have not the slightest intention nor indeed the means of cultivating, but which they wish to occupy, either with the view of keeping other parties out, or from a desire to retain it until it rises in value and the opportunity offers of selling it piece-meal to other individuals." In 1862 Mr. Bowring recommended that the halat should be abolished and that the land should be held free for 4 years, that a rental should be imposed of R. 1 per acre from the 5th to the 9th year, and Rs. 2 per acre in the 10th and thereafter. These views were carried into effect in Coorg, but not in Mysore, out of consideration for objections on the part of Native planters who hold three-fourths of the coffee lands. Speaking from their point of

view, Mr. Bowring remarks, " the cultivation of coffee in the jungles where it is grown being optional, no loss comparatively is entailed on the proprietor if his crop fails, for his outlay is exceedingly small, and the land so cultivated forms but a portion of his farm ; whereas if he paid an acreage on the land, that land not being suitable for other crops, the failure of his coffee would fall heavily upon him and would perhaps lead to his abandoning the cultivation altogether. Large quantities of coffee are grown too on the slopes of the Baba Budan range, which being mostly jaghir land, would probably be considered not amenable to land rent."

The radical defect of the halat system, as stated by Mr. Dalrymple, is that it is practically a tax upon industry, or even a positive premium on slovenly cultivation, inasmuch as the tax is raised in exact proportion to the quantity of produce obtained from the land. An acreage system, he considered, would prevent smuggling, and as no land would be retained by a planter which he had not sufficient means to cultivate, all the tracts suitable for coffee cultivation would become available to capitalists, to the manifest advantage of the revenue as well as of the general interests of the Province.

In 1872, the Planters' Association raised a question in regard to the validity of their title deeds, and were informed by the Government of India, that " in the event of the transfer of the administration of the State of Mysore to Native authority, a guarantee will previously be obtained from the Native Government that all leases of land for the purpose of coffee cultivation to British subjects, whether European or Native, granted under British Administration, will be scrupulously respected as far as the terms of the lease provide, and that no regulation shall be introduced prejudicial to the interests of parties holding leases at the period of the transfer."

The following statistics shew the extension of coffee cultivation, and the revenue yielded by the halat thereon, from the year 1831 :—

Year.	Halat.	Year.	Halat.	Year.	Halat.	Year.	Halat.	Year.	Halat.
1831-2	Rs. 4,270	1836-7	7,476	1841-2	15,205	1846-7	27,320	1851-2	25,952
1832-3	7,472	1837-8	6,282	1842-3	21,720	1847-8	30,059	1852-3	35,952
1833-4	7,472	1838-9	21,011	1843-4	19,779	1848-9	33,349	1853-4	31,327
1834-5	7,476	1839-40	14,811	1844-5	23,256	1849-50	27,509	1854-5	50,204
1835-6	7,476	1840-1	21,943	1845-6	23,066	1850-1	33,300	1855-6	32,229
									42,711
									68,113

Year.	European gardens.			Native gardens.			Total.			Halat from gardens.		Total Halat, Rs.
	No.	Trees.	Acres.	No.	Trees.	Acres.	No.	Trees.	Acres.	European.	Native.	
1862-3	153	24,539,247	25,244	12,285	34,252,796	38,479	12,438	58,792,043	63,723	...	...	93,393
1863-4	179	25,207,886	26,010	12,915	36,116,296	40,534	13,094	61,324,182	66,544	...	...	109,463
1864-5	170	29,264,534	29,117	16,770	55,103,183	54,968	16,940	84,359,717	84,085	...	...	92,791
1865-6	184	30,079,228	29,930	16,607	63,012,587	60,826	16,791	93,091,815	90,756	...	...	102,781
1866-7	196	31,163,346	31,310	18,191	61,163,673	64,151	18,387	92,327,219	95,461	...	...	43,199
1867-8	216	32,106,883	31,468	19,622	72,612,279	67,758	19,838	104,719,162	99,426	...	...	106,357
1868-9	263	32,836,197	32,042	21,275	82,345,985	75,929	21,538	115,182,182	107,971	15,118	89,289	104,407
1869-70	282	33,358,998	32,553	21,563	84,569,049	78,460	21,845	117,923,047	110,993	11,802	55,176	66,978
1870-1	290	34,251,025	34,232	22,191	85,604,132	78,446	22,481	119,855,157	112,678	12,581	57,194	69,775
1871-2	302	34,286,049	34,267	22,330	85,743,192	78,393	22,632	120,031,201	112,860	10,162	64,786	74,948
1872-3	305	34,322,009	34,310	22,759	83,432,653	76,590	23,064	117,537,662	111,000	16,607	62,554	79,161
1873-4	310	34,408,980	33,175	23,409	83,707,410	78,423	23,719	118,116,400	111,508	10,415	44,563	54,978
1874-5	307	34,377,590	32,631	23,594	83,779,620	78,499	23,871	118,157,210	111,130	14,611	51,724	66,395
1875-6	301	34,370,560	32,638	23,942	83,677,400	80,487	24,243	118,047,960	113,125	16,529	58,044	74,573

Under miscellaneous land revenue, the principal item is Village Amrayi or fruit trees, which in the past three years yielded from $\frac{1}{2}$ to over 1 lakh of rupees.

Forests.—The great source of revenue under Forests is the sale of *sandal wood*, for which Mysore has long been celebrated, and which appears from a very early period to have been, as now, a State monopoly; next to this, the sale of *timber* yields the largest amount. Sandalwood does not appear as a separate source of revenue in the accounts till the year 1833—4, when it realized Rs. 30,000, and in 1855—6 the unprecedented sum of Rs. 3,16,000. The annual realizations shew considerable fluctuations, varying probably with the supply and the demand. During the first ten years, up to 1841—2, the receipts aggregated 13½ lakhs, during the next ten years 16½ lakhs, and in the next, 17 lakhs, up to the year 1861—2. The sale of timber is not shewn in the accounts until the year 1857—8.

In 1863—4 the Forest Conservancy Department was introduced, and its control has been gradually extended over tracts which until 1872 were under the management of the ordinary Revenue establishments. The financial results attained before and since the introduction of the new system of Forest Conservancy into Mysore are as follows :—

Decade.		Receipts, annual average.	Charges, annual average.	Surplus, annual average.
1833—4 to 1842—3	Rs.	1,46,795	18,905	1,27,890
1843—4 to 1852—3	...	1,67,453	21,773	1,45,683
1853—4 to 1862—3	...	2,08,520	32,655	1,75,865
1863—4 to 1872—3	...	3,42,493	1,10,950	2,31,473

The maximum was reached in 1873—74, when the gross receipts touched 5 lakhs, and the surplus exceeded 2½ lakhs.

Some arrangements for the Conservancy of Forests seem to have been made in 1857, but before the formation of the Forest Department in 1863, the forests of the three Divisions were worked by the Commissioners, on various systems. The only general rule was, one permitting a ryot requiring any wood but teak or sandal to fell it on payment of a seigniorage of R. 1 per cart load. In Ashtagram, though a wood yard had been established, traders were allowed to remove teak from the forests on a stump fee of 8 annas per tree, a most ruinous system.

The first operation of the Department, after examining the forests,

was to prepare two lists of reserved trees. The first included 15 kinds, declared to be absolutely the property of Government, to fell which, wherever growing, either ryot or trader had to obtain a license on payment of certain fixed rates. The second list contained 27 kinds of trees, reserved from the trader but free to the ryot for his own use, provided they grew within his own taluk. All kinds of trees not named in these two lists, were free to ryots, and might be felled by traders on payment of R. 1 a cart load.

In 1869, new rules were brought into operation providing for the formation of State and District Forests. The first were placed under the sole management of the Forest Department, while the last were left under the Revenue authorities, with the proviso that all reserved trees,—the number of which was now reduced to 9,—growing on Government land, could be sold only by the Forest Department. Ryots were allowed unreserved wood and bamboos free of duty, for agricultural purposes, but paid a duty of R. 1 per cart load for wood for house building purposes. Traders were required to pay for trees of all kinds.

Subsequently it was found that the District authorities had not sufficient establishment to protect the Forests under their nominal charge, and that great waste had resulted from empowering shekdars to grant licenses. During 1871—2, therefore, this power was withdrawn from both Amildars and shekdars preparatory to the introduction of the District Forest scheme, now everywhere established, the main feature of which is the abolition of the license system and the supply of wood from depôts to all comers. Ryots paying land rent were granted an absolute right over all trees growing on their holdings, provided the trees were planted by their ancestors or by themselves, or by former holders of the land from whom the right of occupation had been bought by the present incumbent.

In relation to the new Revenue Settlement, it was decided that the Forest Department should be allowed one year in which to fell all reserved trees on holdings made over on assessment to private individuals. After the lapse of a year, all such trees left unremoved by the Department, to fall, with the exception of sandalwood, to the land holder. The whole tendency, in short, of Forest legislation has been to confer wider privileges on the holders of land and inamdars, and to define and enforce the rights of Government in all forests and over all trees not belonging, under certain fixed rules, to private individuals.

The reserved forests now extend over 450 square miles, the unreserved forests over 150 square miles. Plantations for the growth of teak, timber, sandal and fuel have been formed in different parts, occupying an aggregate of 3,257 acres. Village topes number 16,293, standing on 14,376 acres and containing 811,306 trees ; and 3,615 miles of public road have been planted with trees on both sides, at distances varying from 12 to 60 feet.

Abkari.—This branch of revenue was formerly known in Mysore under the name of Páñch Báb or 'the five items,' namely toddy, arrack, ganja, betel leaf and tobacco. The two last were transferred, the former in 1838—9, and the latter in 1850—1, to the head of Sayar. Up to 1862, the manufacture of toddy, arrack and ganja was under the direct management of Government. In that year the Abkari revenue, including these three items, was temporarily farmed to contractors, prior to the introduction of the Sadar Distillery system, which came into operation in 1863—4 ; but it was not till 1865—6 that steps could be taken to carry its principles fully into effect in the removal of all obstructions to open competition in the manufacture of spirits.

The system referred to provides for the erection of a large enclosure, styled a Sadar Distillery, at the head quarters of each District (and in other places, if the consumption requires it), in which all country spirits consumed in the District must be manufactured. Any person duly licensed may erect a still, at his own expense, within the enclosure, and distill as much liquor as he pleases, removing it himself, or selling it to the licensed vendors, on the sole condition that before removal the excise duty must be paid, and the liquor reduced to the authorized strength ; the officers of Government confining themselves to taking such precautions as will insure no liquor being passed out of the distillery except on these conditions, and having nothing to do with the manufacture, or the price at which the produce is sold.

The object was to secure for the consumer a superior quality of spirit, of standard strength, tested at the Government distilleries within the precincts of which it is manufactured, and to which it pays a still head duty before removal. A restricted system of licenses for the sale of the liquor, combined with regulations for the supervision of the vendors, has also tended to check the promiscuous establishment of shops. The sale of fermented toddy, the liquor commonly used by the lower classes, is also subject to the license regulations. But only the arrack portion of

the Abkari revenue is worked under the Sadar Distillery system. The items of toddy and ganja are farmed out to contractors.*

In 1874 a general revision was made of the rates of still head duty, which varied in different parts from 14 annas to Rs. 3, and they were raised to Rs. 2 per gallon throughout the Province, excepting in the towns of Bangalore and Mysore, in which the rates were fixed at Rs. 3 and 2½ respectively. The strength of the liquor to be issued from the distilleries was fixed at 19° below proof. But in 1875 a special arrangement for 3 years was made for the Mysore District with the Ashtagram Sugar Works at Palhalli, by which the Company have contracted to manufacture liquor at 20° under proof and sell it to Government at 13 annas per gallon. The liquor is sold to vendors on the spot at Rs. 4 per gallon when intended for consumption in the town of Mysore, and at Rs. 3½ for consumption elsewhere within the District. The retail vendors are bound to sell to the public within the town of Mysore at Rs. 5 per gallon, and beyond the town at Rs. 4½.

The following figures will shew the operation of the new rules on the sale and consumption of arrack :—

Year.	No. of stills.	Gallons distilled.	Amount of still head duty.	No. of shops.		Amount paid for licenses.	Remarks.
				Wholesale.	Retail.		
1872—3	54	252,194	Rs. 4,35,755	135	1,484	Rs. 90,414	
1873—4	14	271,572	4,68,521	83	1,442	57,517	*License fees in Bangalore transferred to Municipality.
1874—5	14	219,800	4,56,601	84	1,369	60,654	
1875—6	11	188,425	4,77,628	85	1,149	50,362†	†System of putting up retail shops to auction discontinued.

The brewing of beer, at 3 breweries in operation in Bangalore, has been rapidly increasing. A still head duty of 2 annas a gallon was imposed on it in 1873—4. The following are the returns since that time:—

	Gallons brewed.	Amount of duty.
1873—4	58,617	Rs. 7,327
1874—5	122,688	15,335
1875—6	140,832	17,604

From 1st April 1876, the still head duty on beer is raised to 4 annas per gallon.

Toddy in this Province is extracted from date trees, which grow

*Inamdars whose sunnuds include the right, receive the revenue from arrack licenses in their inam villages.

wild throughout the country, and in a few places from cocoa nut and sago palm trees. All date trees growing on Government or ryotwari lands, whether occupied or unoccupied, are regarded as at the disposal of Government for Abkari purposes; but trees growing on occupied Government lands in the surveyed taluks, and those in inam and kayangutta villages the toddy revenue of which is granted to the holders by their sunnuds, are regarded as the property of the landholder, and are therefore excluded from the contractor's lease. The exclusive right of drawing and vending the toddy is rented out to the contractors for a term, which varies in the different Divisions. The area over which such right may be exercised varies from one taluk to a District, according to the circumstances of the District and means of the contractor. Till 1872 the farming of the toddy was leased out annually in Nundydroog and Ashtagram, and for five years in Nagar, but owing to the inconvenience of frequently changing contractors, the latter period has been adopted in all. Date reserves are being formed in each District on waste or unoccupied lands, demarcated for the purpose as the survey progresses. This measure is necessary to guard against the possible inconvenience of a general destruction of date trees on their kandáyam lands by the ryots. No grant of land for cultivation is made within the limits of such reserves.

The revenue derived from a tax on spirituous liquors, ganja and toddy, appears from the accounts of 1799—1800, to have produced Kanthiraya pagodas 28,800, or Rs. 84,000 in that year, and Kanthiraya pagodas 44,290, or Rs. 1,29,179 in 1802—3. The receipts are not distinctly shewn in the earlier years of British Administration, but in the accounts of 1836—7, the Abkari revenue is entered at $2\frac{1}{2}$ lakhs of rupees, and it has gradually risen, producing $10\frac{1}{2}$ lakhs in 1872—3. The next two years it was $11\frac{1}{2}$ lakhs and in 1875—6 reached $12\frac{1}{2}$ lakhs.

Sáyar or Customs.—The Sayar system in Mysore under the former Governments has already been fully described, and the mode in which it was dealt with by the British Administration down to 1854.

In the year 1860, only 24 articles were made subject to sayar taxes, the former rates of duty as prescribed in the old *prahar patti* being entirely altered. In 1864, the number was further reduced, and the export and import duties on all articles, except areca nut, coffee, and tobacco, between the Province of Mysore and the surrounding districts of Her Majesty's Territory were entirely and absolutely relinquished, with a

view to stimulate industry and to foster the trade of the country ; Sayar being levied only on the following articles, produced within the Province and intended for home consumption :—

(1) Areca nut, 6 annas to R. $1\frac{1}{4}$ per maund of 28lbs ; (2) Tobacco, R. 1 to $3\frac{1}{2}$ per maund of 24lbs ; (3) Cocoa nut, dry, $7\frac{1}{2}$ annas per maund ; (4) Cocoa nut, fresh, 8 annas per 100 ; (5) Cardamoms, Rs. 2 per maund ; (6) Pepper, 4 annas per maund ; (7) Betel leaves, 1 to 2 pie per bundle of 100 leaves ; (8) Piece-goods, 5 per cent *ad valorem* ; (9) Opium, 20 per cent *ad valorem*. Of these, areca nut, tobacco, pepper, cardamoms and opium were liable to the duty both when imported and when exported.

In 1875 the duty on piece-goods of local manufacture was abolished permanently, and that on pepper temporarily. The excise duty on areca nut and on tobacco, assorted with or without stalks, was fixed at a uniform rate of 12 annas per maund, and the duty on tobacco stalks abolished. The rate for betel leaves was fixed at 1 pie per bundle.

Sayar duties appeared in the accounts of 1799—1800 at the respectable sum of Kanthiraya pagodas 2,26,000 or Rs. 6,59,166, and in those of 1802—3 Kanthiraya pagodas 2,57,000 or Rs. 7,49,583. They rose to a sum of Rs. 10,45,000 in the year 1846—7. The bulk of the numerous petty taxes which were either abolished or modified between the years 1831 and 1854 were classed in the accounts as Sayar. It has been seen that the gross annual amount thus remitted was $10\frac{1}{2}$ lakhs. But we still find that the Sayar collections, which had never exceeded $10\frac{1}{2}$ lakhs in any one year during the existence of those taxes, were not seriously diminished after their removal. On the contrary, the Sayar receipts amounted to $9\frac{1}{2}$ lakhs annually in the years 1856—7 and 1859—60, to $10\frac{1}{2}$ lakhs in the next year, and to $11\frac{1}{4}$ in 1861—2. In 1862—3 they produced Rs. 10,46,000 only, owing to an unfavourable season for the supari and tobacco crops. In the following year they again reached Rs. 11,33,000. With the customs duties abrogated in 1864, a vast horde of petty customs establishments, numbering 1,800 men on trifling stipends, were dispensed with, reducing the cost of collection from 1 lakh to about Rs. 40,000 annually. Consequent on these measures, Sayar being levied as an excise on only eight articles of home produce, the Sayar revenue, as may have been expected, fell to Rs. 8,88,000 in 1865—6, and to 7 lakhs in 1867—8. It however gradually revived, and amounted to $7\frac{1}{4}$ lakhs in 1871—2, and to more than $9\frac{1}{4}$ in

1872—3. Owing to unfavourable seasons, it fell a little below this in the next year, and in 1874—5 to 8½ lakhs. The abolition and reduction of duties in that year still further reduced the Sayar collections, which for 1875—6 stood at a little below 6½ lakhs. To this total, areca nut contributes 4½ lakhs and tobacco nearly a lakh.

Mohatarfa or *assessed taxes*. Under the former Governments of Mysore, various taxes were levied on castes and professions, besides taxes on houses, looms, shops, and oil-mills, and included under the general head of *Mohatarfa*. In the year 1860, a general revision of the *Mohatarfa* taxes took place, when most of them were abolished, and five were retained, *viz.* a tax on houses, on looms, on shops, on oil-mills, and on ploughs. A tax on carts was introduced in 1870. In the year 1871 the plough tax was abolished, being superseded by the local cess. *Mohatarfa* is therefore at present levied on the following items: houses, shops, looms, oil-mills, and carts. These taxes do not now directly touch the ryot, but are confined to other classes. Special exemptions from house tax are, however, accorded to Brahmans, Musalmans and certain officials, in accordance with ancient usage.

From 1840 up to the year 1854—5, the receipts amounted to 6½ lakhs per annum, but during that period they included some items which are now classed under other heads of accounts, and several taxes which no longer exist. After the abolition of these, the collections fluctuated between 4 and 5 lakhs from the year 1856—7 to 1861—2, when they amounted to Rs. 4,79,000. In 1862—3 they declined still further, to Rs. 3,52,000. In 1872—3 they were Rs. 3,22,000, exclusive of the cart tax, which was levied from 1870. The decline is partly attributable to the alienation, for municipal purposes, of the *Mohatarfa* taxes levied in the towns.

The following are the receipts under *Mohatarfa* for the past five years. In 1874—5 the assessed taxes in two more towns were transferred to the municipalities.

		Houses.	Shops.	Looms.	Oil-mills.	Carts.	Miscell.	Total.
1871—2	...	Rs. 1,58,548	85,362	74,742	13,445	34,053	544	3,66,694
1872—3	...	1,59,172	87,916	73,757	13,649	31,014	484	3,68,022
1873—4	...	1,59,775	90,053	76,518	13,940	33,472	69	3,73,827
1874—5	...	1,57,236	89,070	76,539	13,804	31,480	20	3,68,249
1875—6	...	1,57,000	88,936	76,029	13,812	31,735	215	3,67,727

The rates vary from 8 As. to 12 Rs. per annum on each house, 8 As. to 30 Rs. per shop, 8 As. to 5 Rs. per loom, 1 R. to 20 Rs. per oil-mill, 2 Rs. per cart owned by the non-agricultural classes,

Certain classes, who from time immemorial have enjoyed immunity from taxation, are exempted from payment of the house tax, except in municipal towns, where they are required to pay the municipal tax like other people. The number of houses claiming exemption is 890,000, of which 640,000 belong to the agricultural classes, 150,000 to Brahmans, Musalmans and Rajbindes, 46,000 to headmen of towns and villages, and the remainder are houses which pay the shop, loom, or oil mill tax.

Salt.—The revenue under this head is derived from fees levied on pans for the manufacture of earth salt. This article is consumed by some of the poorer classes of inhabitants throughout Mysore, and by most of the people in Chitaldroog District. It is also given to cattle. But the bulk of the people consume the marine salt imported from the sea coast of the Madras Presidency. In 1873—4 the manufacture of earth salt within 5 miles of the frontier, and the exportation of the article to Her Majesty's Territories, were prohibited. The number of pans is 2,200.

Stamps.—Stamp duties existed in Mysore on the assumption of the government in 1831—2, but they were levied on a primitive system, moderate in its rates and limited in its incidence. Between the years 1831 and 1861, the annual yield was between 6,000 and 9,000 Rs., in two years only it reached Rs. 10,000, and in another Rs. 15,000. In 1861—2 the old system produced its maximum revenue, which was but 19,900 rupees. During these years, court fees were paid chiefly in coin, and were mixed in the accounts with other receipts. In 1862—3 there was a revision of the local regulations, which raised the stamp revenue to Rs. 71,628 in that year, to Rs. 1,57,000 in the next, and to Rs. 2,41,000 in 1864—5. In 1865 the Indian Stamp Act was introduced, and the revenue has since made rapid progress, reaching 4½ lakhs in 1869—70. After that year the amount realized from court fee stamps is credited to the head Law and Justice.

Post Office.—For many years, the Anche or Local Post appears to have been almost wholly devoted to the conveyance of official despatches. The growth of the postal receipts has been slow, but steady. During 1833 to 1843, they rose from Rs. 2,000 to Rs. 6,000, in 1853 to Rs. 12,000, in 1863 to Rs. 30,000. In 1872—3, notwithstanding a reduction of postal rates in accordance with the British India scale, the revenue was Rs. 44,000. The cost of the Department, which has always

exceeded its receipts, —public despatches being carried free of postage in any shape,—has been enhanced from year to year, but has not grown so rapidly as the income from private correspondence. The establishment cost Rs. 33,000 in the year 1833 ; Rs. 44,000, in 1843 ; Rs. 49,000, in 1853 ; Rs. 95,000, in 1863 ; and Rs. 1,51,000, in 1873.

In 1875—6, the number of receiving houses was 152, the postal lines traversed by runners aggregated 2,312 miles. No postage stamps are in use, but Rs. 50,000 is realized from payments on private letters. The correspondence passed through the Anche has risen from $1\frac{1}{2}$ millions in 1861—2 to $2\frac{3}{4}$ millions. In 1875—6, postage was paid on $1\frac{1}{4}$ million of letters, 59,000 newspapers, and 9,601 parcels. The official correspondence, carried free of charge, consisted of $1\frac{1}{4}$ million of letters, 30,000 packets, and 26,000 gazettes. From 1872—3, an arrangement has been entered into with the Imperial Post Office to distribute by Anche all unpaid letters addressed to Mysore, the latter retaining half the amount of postage due on all except overland letters from Europe, for which latter the full charge is repaid.

Local Funds.—By 1871—2, an important change was effected in the mode of raising an income for local purposes, by the abolition of the ancient Plough Tax and the introduction of a Local Cess. The Mysore Local Funds consist of a cess levied at the rate of one anna in the rupee of the land assessment in settled taluks, and half an anna in unsettled taluks, as well as of half an anna upon the collections realized from Sayar, Abkari, forest produce, coffee halat and salt pans. In towns where there are no municipalities, the revenue derived under the operation of the Cattle Trespass Act, the rent from ferry contracts, and certain other miscellaneous items, are also exhibited under the head of local funds.

Out of the total collections of the Local Fund cess, 24 per cent are appropriated to education, for the support of village schools, and (with the exception noted below) 76 per cent are credited to the local fund account of the District in which they are raised, under the name of District Local Funds, to be applied to the maintenance of roads, &c. Out of the collections levied on abkari, supari (except in Shimoga and Kadir Districts), and miscellaneous items, the 76 per cent are shewn in a separate account, and are held in deposit in the Huzur Treasury under the name of Local Funds General, which are at the disposal of the Chief Commissioner for expenditure where he deems that a special grant is called for.

An irrigation cess, at one anna in the rupee of the assessment upon wet lands, Sarkar or inam, is also levied in the surveyed taluks and credited to the local fund revenues to meet the cost of up-keep of irrigation works. But in 1872-4 the separate levy of this cess was abolished, the amount being merged in the ordinary assessment on wet land; and at the settlement of each taluk an equivalent lump sum will be set apart out of the annual revenue of the taluk to form a District Irrigation Fund.

The revenue credited to Local Funds since 1871-2 has been as follows:—

1871-2	Rs.	3,47,205	1874-5	Rs.	4,75,207
1872-3		4,38,815	1875-6		5,12,033
1873-4		4,59,979			

Municipal Funds.—Municipal Committees were first experimentally formed in 1862, at Bangalore and Mysore. The experiment proved a success, and by 1864-5 each of the 8 District head-quarter stations possessed a Municipal Committee. The measure was next extended to Taluk kisbas, and eventually to other large trading towns and villages. The District head quarter municipalities are the most important, the municipal proceedings in minor towns being at present limited to conservancy operations, in which, however, material improvement is visible.

In Bangalore, where the municipal operations are conducted on a large scale, and their control and direction require special attention and involve much labour, the President is paid Rs. 700 per mensem, which is defrayed by the municipalities of the Cantonment and Town of Bangalore, in the proportion of 3rds and 1rd respectively. In the other District head quarter municipalities, no salary is attached to the office of the President, a selected Government official of the station undertaking the charge in addition to his other duties. In all of these municipalities, regularly organized Boards have been formed, consisting of the most influential European and Native members of the community. In the smaller towns, where it has been found difficult to constitute regular Boards, municipal regulations have with great advantage been introduced and enforced through the agency of the revenue officers.

On the 1st April 1871, a new Code of Municipal Regulations for the Cantonment and Town of Bangalore was introduced. These regulations provide for the appointment of Commissioners for making better provision for the police, conservancy and improvement of the Cantonment

and Town, and for enabling the Commissioners to levy taxes, tolls, town dues and rates therein. Under the operation of these regulations, a material change was effected in the composition of the Board. In substitution of the previous arrangements for the selection of members, the Cantonment was divided into six divisions or wards, and the Town into three, from each of which two persons residing therein were nominated by Government to be Municipal Commissioners. In addition to these the Board is further composed of six *ex officio* members, specially selected to represent all branches of the official community, the number being restricted to a third of the total number of the Commissioners.

In the year 1872—3, the revenue derived from the sale of licenses for retail vend of arrack in Bangalore was transferred to the Municipality, with a view to increase its revenues, and to prevent the number of shops multiplying indiscriminately beyond the actual requirements of the place. For a better administration of the alkari retail vend within the Town and Cantonment municipal limits, a Bench of Magistrates, composed of the Deputy Commissioner, the Cantonment Magistrate and the President of the Municipality, has been constituted, the last of the above mentioned officers being vested with the powers of a Justice of the Peace. The decree of the Bench of Magistrates is considered final in matters relating to the allotment and renewal of licenses and disposal of complaints.

The following are the taxes authorized to be levied by the Municipalities.—1. An octroi or tax on articles brought within municipal limits for consumption and use therein. 2. Tax on houses, buildings and lands. 3. Tax on professions and trades. 4. Tax on carriages, carts, &c. 5. Tolls on carriages, carts, &c. 6. Ferries. 7. Tax on licenses. 8. Tax on bricks and tiles. The octroi is the most productive of all the taxes. Next in order, stand the house tax and tax on professions and trades. In the Nandidroog Division (except the Town and Cantonment of Bangalore), the house tax has been levied in substitution for the octroi in all the municipalities of the Bangalore and Kolar Districts, and in four places in the Tumkur District, *viz*, Tiptur, Bellavi, Gubbi and Tumkur, in the first two of which great marts are held weekly, while the third is the most important entrepôt for the Malnad areca nut produce, and the fourth is the head quarters of the District. Octroi is still levied in the other towns of the Tumkur District, but the house tax is regarded as furnishing a more certain source of income, not being subject to the fluctuations of trade like the octroi, or liable to misappropriation by the collectors. In the Ashtagram Division, to avoid pressure upon the poorer

classes, grain the staple food of the people, has been exempted from the tax. The number of taxable articles under octroi amounts to 20 in Mysore, and 15 in Seringapatam and Hunsúr; at Hassan the chief article taxed is tobacco. There is also an *ad valorem* duty at 5 per cent on the sale, at these places, of country cloth manufactured elsewhere than in Mysore. The *ad valorem* duty on piece-goods forms an appreciable portion of the octroi duty generally, but especially in Shimoga and Tarikere. But as the pressure of this tax tells more on the poorer classes than on the rich, its levy is under inquiry, in view to such changes as may appear desirable.

In the town of Mysore, all sayar collections were transferred to the municipality so far back as 1863. The mohatarfa collections were surrendered to the municipality of Seringapatam on condition of their maintaining their own Police; and have since been surrendered on the same conditions to the municipalities of Bangalore, Kolar, Shimoga, Chitaldroog and Chikmagalur, the latter also defraying the cost of the Government schools in the town. This tax had been carefully revised, and extended to the privileged classes who had hitherto been exempt, in accordance with the annexed schedule; the last three rates being specially sanctioned for the Town of Mysore.

	Rs.		Rs.		Rs.		Rs.		Rs.		Rs.
House valued below	...	50	1	House valued from	1,000	to	1,500	7			
Do from	50	to	100	1	Do	1,500	to	3,000	9		
Do "	100	to	200	2	Do	3,000	to	5,000	12		
Do "	200	to	300	3	Do	5,000	to	6,000	15		
Do "	300	to	500	4	Do	6,000	to	10,000	30		
Do "	500	to	700	5	Do	10,000	to	20,000	60		
Do "	700	to	1,000	6	Do	above	...	20,000	120		

The total amount of municipal revenue in 1875—6 was 3½ lakhs of rupees. Of this sum Rs. 1,55,569 were obtained from octroi, Rs. 71,979 from house tax, Rs. 61,818 from tax on professions, Rs. 1,119 from tax on carriages, Rs. 9,555 from rents, Rs. 9,549 by transfer and contributions, Rs. 65,896 from miscellaneous items, such as sale of stray cattle, pound fines, fines for offences against municipal rules, and market rents.

The following figures exhibit the growth of municipal institutions and funds since their first establishment :—

Year.	Bangalore.		Mysore.	District Head Quarters.		Other Towns.		Total Receipts.	Expenditure.
	Cantonment.	Town.		No.	Amount.	No.	Amount.		
1862—3	37,509	21,681	23,369	...	...	...	...	82,559	...
1863—4	35,000	20,350	28,713	...	...	...	...	84,063	39,302
1864—5	58,793	19,585	33,992	...	...	...	...	1,12,370	93,900
1865—6	71,688	26,322	35,190	6	16,087	...	...	1,49,287	1,44,976
1866—7	58,034	23,330	31,387	6	12,078	...	...	1,24,829	1,35,150
1867—8	60,090	26,451	41,612	6	13,761	48	10,672	1,52,586	1,41,818
1868—9	62,561	48,751	30,422	6	16,297	48	17,128	1,75,159	1,49,061
1869—70	69,939	43,010	28,106	6	20,286	48	21,352	1,82,723	1,97,030
1870—1	56,778	52,867	47,217	6	21,520	48	28,737	2,07,117	2,08,927
1871—2	92,617	59,332	71,168	6	28,189	48	37,835	2,89,141	2,59,186
1872—3	1,18,535	61,034	76,115	6	32,930	48	51,600	3,40,264	3,01,567
1873—4	1,19,179	61,930	80,250	6	34,398	67	57,432	3,53,189	3,39,134
1874—5	1,18,257	63,440	85,076	6	41,366	67	56,729	3,64,868	3,70,448
1875—6	1,22,737	64,769	82,775	6	45,218	67	60,019	3,73,518	3,67,370

Although, excepting in the towns of Bangalore and Mysore, the municipal institutions of the Province are as yet in their infancy, the commencement that has been made has already borne fruit, and there is every reason to believe that these institutions will become more appreciated by the people as their sphere of improvement and usefulness extends. Every effort is being made to encourage the non-official classes to interest themselves in the progress and management of their local municipalities, and it is hoped that in due time a fair proportion of the Boards of these institutions may with advantage be composed of persons elected by the people themselves.

State Expenditure.—While the Mysore revenues have expanded under British management, as described in the preceding pages, the expenditure has risen rapidly with the reforms introduced in all Departments of the Administration, more especially since 1862. Notwithstanding the exceptional demands during the first 25 years on account of the debts of the State and the late ruler, the accounts shew that from 1831 to the close of the year 1861—2, there was a surplus of receipts amounting to Rs. 1,00,91,000, or excluding the receipts and payments on account of the loan from the British Government and the Maharaja's debts, Rs. 152½ lakhs. The average annual revenues and charges, without those exceptional items, were as follows during the respective decades from 1832—3 to 1861—2.

Decade.	Average annual Receipts.	Average annual Expenditure.	Average annual Surplus.
1832—3 to 1841—2	Rs. 70,08,000	69,21,000	87,000
1842—3 to 1851—2	76,61,000	68,91,000	7,70,000
1852—3 to 1861—2	86,54,000	79,92,000	6,62,000

The increase of expenditure since 1852—3 will be made intelligible by the following comparison of the charges for that year and 1861—2, which was the last year of the former regime ; next 1863—4, when the administration had been fully reorganized ; 1872—3, completing the second decade ; and 1875—6, the last year for which we have accounts.

Head of charge.	1852—3.	1861—2.	1863—4.	1872—3.	1875—6.
Civil charges of Administration ...	18,56,000	25,99,000	32,78,000	40,34,000	47,44,000
Local Force ...	10,04,000	10,46,000	10,80,000	10,86,000	8,60,000
Religious and charitable Institutions ...	2,99,000	3,02,000	2,61,000	2,83,000	2,93,000
Subsidy to British Government ...	24,50,000	24,50,000	24,50,000	24,50,000	24,50,000
Maharaja's stipend and share of Revenue ...	14,38,000	15,11,000	14,03,000	8,54,000*	8,80,000
Public Works Expenditure ...	4,64,000	11,64,000	13,59,000	14,24,000	21,97,000
Total Administration Charges...	75,71,000	90,72,000	98,31,000	1,01,31,000	1,14,14,000

The analysis of Civil charges, as under, will shew the departments under which increase has mainly arisen.

Head.	1852—3.	1861—2.	1863—4.	1872—3.	1875—6.
General charges ...	Rs. 2,34,000	3,50,000	3,35,000	3,25,000	3,65,000
Revenue and Judicial ...	8,19,000	11,81,000	15,38,000	16,20,000	17,37,000
Revenue Survey ...	...	...	38,000	2,47,000	2,89,000
Inam Commission ...	...	...	...	85,000	75,000
Sayar and Abkari ...	2,08,000	2,60,000	97,000	59,000	72,000
Forests ...	18,000	53,000	32,000	1,86,000	2,35,000
Stamps ...	...	...	43,000	13,000	13,000
Post Office ...	48,000	95,000	95,000	1,51,000	1,60,000
Jails ...	16,000	25,000	1,06,000	1,10,000	1,23,000
Registration...	...	...	...	17,000	20,000
Police ...	3,25,000	3,94,000	4,97,000	4,45,000	5,70,000
Political Pensions ...	82,000	73,000	58,000	66,000	64,000
Service Pensions and Gratuities ...	1,000	14,000	86,000	1,14,000	1,79,000
Medical Department ...	35,000	64,000	86,000	1,30,000	1,49,000
Education ...	6,000	43,000	73,000	2,45,000	2,45,000
Miscellaneous charges ...	64,000	47,000	1,80,000	1,81,000	3,51,000
Refunds of Revenue ...	...	...	4,000	40,000	97,000
	18,56,000	25,99,000	32,78,000	40,34,000	47,44,000

From the review now given of the finances of Mysore, it will be apparent that during 40 years of British rule, a period of profound peace, the country having been spared the convulsions of 1857, the revenues doubled from 55 lakhs to 110 lakhs, and the administrative charges which were about 55 lakhs in the earlier years are now about 101 lakhs. When the British assumed the government in 1831, they found the State encumbered with debts, the liquidation of which cost 87½ lakhs during the first 25 years, and the revenues had to bear a further charge of 39½ lakhs between 1864 and 1869, on account of fresh

* Palace charges after the late Maharaja's death.

debts contracted by the late Maharaja. The State is now free from such liabilities, with a steadily improving income, an ample cash balance, and an invested surplus in 1875—6 of 63 lakhs. The financial prospects of the future are thus encouraging, and the means are at hand for conferring still greater benefits on the country, while it is held in trust by the British Government.

Law and Justice.

Legislation.—Mysore being a Native State, the Legislative enactments of the Government of India do not necessarily apply to it in common with British India. When, therefore, the extension to Mysore of any Legislative enactment of the Government of India, or of the Governments of Madras or Bombay, is considered necessary, it is usual to make a special application to the Governor General in Council with this object.

The following is a list of the Acts of the Government of India which have been extended to Mysore either in whole or in part.

No. and year of Act.	Name or subject of Act.	Date of extension to Mysore.
XX of 1847	Copyright of Books	1867
IX of 1850	Small Cause Courts	1863
XIX of 1850	Binding of Apprentices	1875
XVIII of 1854	Railway Act	1864
XXI of 1856	Abhari Revenue	1864
VI of 1857	Acquisition of Land for public purposes	1867
VIII of 1859	Civil Procedure Code	1869
XIV of 1859	Limitation of suits, Section 15	1875
XIII of 1859	Breach of Contract	1864
XXVII of 1860	Collection of debts on succession	1868
XXVI of 1860	Sale of arms and ammunition	1868
XLV of 1860	Indian Penal Code	1862
V of 1861	Regulation of Police	1866
XXIII of 1861	To amend the Civil Procedure Code	1869
XXV of 1861	Criminal Procedure Code... ..	1862
XXIX of 1861	Articles of war	1868
X of 1862	Indian Stamp Act... ..	1865
VI of 1864	Whipping Act	1864
XIII of 1864	Emigration Act	1865
V of 1865	Marriages of Christians	1865
X of 1865	Indian Succession Act	1868
XI of 1865	Muz-sh Small Cause Courts	1868
V of 1866	Bills of exchange	1868
VI of 1866	Arms and ammunition, &c... ..	1868
X of 1866	Trading Companies	1868
XIV of 1866	Post Office	1867
XX of 1866	Registration of Assurances	1866
III of 1867	Public gambling	1867
VII of 1867	Purchase of Soldiers' articles	1871
XXIV of 1867	Administrator General's Act	
XXV of 1867	Regulation of Printing Presses, &c.	1867
XXXII of 1867	Conferring on Chief Commissioner powers of a Local Government	
XXVII of 1868	Limitation of Indian Registration Act	1868

No. and year of Act.	Name or subject of Act.	Date of extension to Mysore.
II of 1869	Justices of the Peace	
VIII of 1869	Criminal Procedure Code Amended	1869
XVIII of 1869	General Stamp Act	1870
	Rules for the Forest Department of Mysore...	1869
XXI of 1869	European vagrancy	1871
XX of 1869	Indian Volunteer Act	1870
VII of 1870	Court Fees	1870
X of 1870	Land Acquisition	1870
XXIII of 1870	Indian Coinage	1870
XXVII of 1870	To amend the Indian Penal Code	1871
	Code of Municipal Regulations	1871
I of 1871	Cattle Trespass	1872
	Custody and guardianship of Minors, Idiots, &c.	1872
VIII of 1871	Indian Registration Act... ..	1871
IX of 1871	Indian Limitation Act	1871
	Rules under the Contagious Disease Act	1871
XXVIII of 1871	Pensions	1873
XXV of 1871	To amend the Railway Act	1871
I of 1872	Indian Evidence Act	1872
X of 1872	Code of Criminal Procedure	1872
XI of 1872	Foreign Jurisdiction and Extradition Act	1872
XV of 1872	Indian Christian Marriages	1876
XVIII of 1872	Indian Evidence Act, amended	1872
XIX of 1872	To amend the definition of coin in Indian Penal Code	1872
V of 1873	Government Savings Bank	1873
X of 1873	The Oaths Act	1876
XI of 1874	Criminal Procedure Code, Amendment Act	1874

The following Acts of the Madras and Bombay Legislatures have also been extended to Mysore.

No. and year of Act.	Name or subject of Act.	Date of extension to Mysore.
<i>Madras</i>		
I of 1863	Madras Local Act	1865
III of 1869	To empower Revenue Officers to summon	1869
I of 1873	Wild elephants	1874
<i>Bombay</i>		
I of 1865	Survey, Demarcation, Assessment and Administration of lands	1869
IV of 1868	Amended Bombay Act I of 1865	1869

Courts.—The following statement exhibits the gradation and numbers of the Courts of Justice as now constituted, with the magisterial powers and limits of jurisdiction of the several judicial officers.

Courts,	Judicial Powers.	Original.		Appeal.		Executive or other functions of same Officers.
		Criminal.	Civil.	Criminal.	Civil.	
Peshkars ...	Magistrates of the 3rd class ...	20	...	...	...	All duties entrusted to them by the Amildars, and in their absence all duties connected with their office. Haliyurdroog Peshkar is also a Sub-Registrar.
Sheristadars ..	Do ...	18	...	...	...	Revenue and ministerial functions.
Amildars ...	Do ...	68	...	...	...	General supervision of Revenue, Muzrayi, Registration, Municipalities &c., within their respective taluks.
Munsiffs ...	Dispose of Civil suits up to Rs. 300 in value; also have Small Cause powers up to Rs. 20, but Mysore Munsiff up to Rs. 50.	...	22	...	...	Turvekere Munsiff is also a Sub Registrar.
Sar-Amin ...	Magistrate of the 2nd class ...	1	...	...	...	Sub Registrar for Bangalore Cantonment and Executive Officer of the Municipal Board.
Town and Cantonment Magistrates.	Magistrates of the 1st Class. Bangalore Town and Cantonment Magistrate hears appeals from decisions of the Sar Amin and the Magistrate of the Peta in Criminal cases.	2	...	1	...	Mysore Town Magistrate Superintends the Mysore Town Police and is President of the Municipal Board.
Judicial Assistants ...	Dispose of original Civil suits from Rs. 300 to Rs. 5,000, with appellate powers in cases transferred to them by the Deputy Commissioners. Also Small Cause powers up to Rs. 300 in addition in Head Quarters.	...	8	...	8	In charge of District Jail and Treasury.
Small Cause Court, Bangalore.	Small Cause jurisdiction up to Rs. 1,000. The Registrar up to Rs. 20 ...	...	1	...	...	
Jaghiridar of Yelandur.	Magistrate of the 1st class ...	1	...	...	...	The present Jaghiridar is an Assistant Commissioner.
Assistant Commissioners.	Magistrates of the 2nd class ...	7	...	...	...	Generally assisting the Deputy Commissioners in all branches of duties excepting Civil.
Do ...	Magistrates of the 1st class. Dispose of appeals from decisions of 3rd class Magistrates in Criminal cases.	10	...	10	...	
Deputy Commissioners...	Powers of a Magistrate of a District with enhanced powers under Section 36 of Act X of 1872. Dispose of original Civil suits from Rs. 5,000 to Rs. 10,000 in value. Hear appeals from decisions of Munsiffs in Civil cases, and of 2nd and 3rd class Magistrates in Criminal cases ...	8	8	8	8	General supervision of Revenue, Muzrayi, Registration, Municipalities, Public Works and Police.
Commissioners	Powers of a Sessions Judge. Dispose of Civil suits above Rs. 10,000 in value. Hear appeals from the decisions of the Judicial Assistants in Civil cases, and of the 1st class and District Magistrates in Criminal cases ...	3	3	3	3	General supervision in the Division. The Commissioner of Ashtagram is also Sessions Judge of Coorg.
Judicial Commissioner ...	Powers of a High Court, and original jurisdiction in granting probates and letters of administration.	...	...	1	1	Also Inspector General of Jails and Police in Mysore and Coorg, and Judicial Commissioner of Coorg

The present System of Judicature is based upon the administrative regulations introduced in 1862—3, as previously described. But in 1869 revised Rules of Civil Procedure were introduced, and in 1872 the new Criminal Procedure Code ; and on these the practice, functions and powers of the existing tribunals, as above set forth, are more immediately founded. In 1866 appeals from the decisions of Assistant Commissioners to the Deputy Commissioners were abolished, such appeals lying to the Commissioners of Divisions. In 1867 rules were enforced for oral hearing and written judgments in appeal cases, and for the enrolment of pleaders. The following remarks on these changes are by Mr. J. R. Kindersley, officiating at that time as Judicial Commissioner.

‘ The most important alteration which has been lately made in the Civil Procedure in Mysore, has been the strict enforcement from the commencement of 1867 of these two rules ; 1st, that no decree should ever be passed on appeal without giving the parties an opportunity of appearing on an appointed day ; 2nd, that the decision should invariably be written by the judge. Formerly, parties to appeals were sometimes heard and sometimes not. The courts were not generally built so as to be very accessible ; no great regularity was observed in hearing appeals on fixed days ; and it was the interest of the subordinate officials to discourage the personal attendance of suitors ; while pleaders were admitted only by permission of the judges. The demoralizing effects of a system which placed it in the power of subordinate officials to make representations behind the backs of the parties need not be fully described. It became the practice in several of the superior courts for the facts of a case to be stated by a subordinate public servant, and occasionally I have found the decision written by such a person, and only signed by the judge.’

The number of pleaders enrolled up to the present time is 120*.

In 1873 was commenced, as a step towards the separation of judicial and executive functions, the formation of Munsiffs’ Courts in the Nundidroog Division, which relieved the Amildars of jurisdiction in civil cases and enabled them to devote more attention to their revenue duties, now becoming increasingly heavy. The measure was extended to Ash-tagram and Nagar in 1875, the expense of the new establishments being met by reducing the number of taluks.

Civil Justice.—The following is the number and value of civil suits instituted for a series of years. The figures shew a steady increase in litigation :—

• In 1867	...	31	In 1870	...	17	In 1873	...	5
„ 1868	...	9	„ 1871	...	13	„ 1874	...	12
„ 1869	...	10	„ 1872	...	10	„ 1875	...	13

No. of Suits.		Value of Suits.	No. of Suits.		Value of Suits.
1865	17,012	Rs. 23,31,666	1871	20,764	Rs. 29,06,407
1866	12,342	13,95,023	1872	21,407	23,13,785
1867	13,455	22,69,350	1873	21,414	23,45,380
1868	14,702	17,03,488	1874	22,652	23,13,082
1869	16,835	15,30,499	1875	25,052	25,02,152
1870	20,201	20,98,986			

From the returns of the two last years it is found that more than one half of the total number of suits filed are on written obligations, and under Rs. 500 in value. About 58 per cent of the suits are disposed of by the Munsiffs, and 27 per cent by the Bangalore Court of Small Causes. Nearly three-fourths of the suits are uncontested. Of the contested suits, about three-fourths are decided for the plaintiff, and one-fourth for the defendant. Of the uncontested cases in 1875, there were transferred 274, plaint rejected or returned 227, dismissed for default 2,283, withdrawn 422, compromised 886, decreed on confession 4,472, decreed *ex parte* 7,481, (more than a half being in the Bangalore Small Cause Court), dismissed *ex parte* 1,316. The average duration of suits was 32 days in contested and 18 in uncontested cases.

There were 897 civil appeals in courts below the Judicial Commissioner's, of which 46 were dismissed for default, 449 confirmed, 103 modified, 191 reversed, 64 remanded. The average duration of appeal cases was 35 days.

Registration.—The Registration Act XVI of 1864 came into operation in Mysore on the 1st January 1866, and the amended Act XX of 1866 on the 1st January 1867. By a new Act, introduced in September 1871, a large class of documents previously subject to compulsory registration was exempted, namely, coffee land grants, inam title-deeds, and various assignments of land made by Government. Other provisions of that enactment,—such as the admission of unregistered documents in evidence of contracts even where they relate to immovable property, and the withdrawal of the special advantages conferred on registered instruments by the old Act, by removing the obligation in some cases and the incentive in others,—tended to reduce the work of the Department. The following statistics will shew the progress of registration year by year, and the effect of the modifications referred to:—

Year.	Immovable property.			Movable Property.
	Compulsory Registrations.	Voluntary Registrations.	Total value. Rs.	Registrations.
1865—6	695	414	...	423
1866—7	3,107	1,352	...	1,392
1867—8	4,408	1,764	...	513
1868—9	4,672	1,221	...	...
1869—70	5,513	1,493	28,59,415	478
1870—1	6,083	1,619	32,65,551	462
1871—2	5,239	1,612	10,00,706	417
1872—3	6,926	1,700	33,12,611	415
1873—4	6,566	1,591	33,08,500	448
1874—5	7,382	2,135	34,32,219	463
1875—6	8,121	2,721	41,88,553	512

Criminal Justice.—The following figures exhibit the statistics of crime for seven years passed, and shew a decided diminution in serious offences. Of heinous crimes, there were in the last of these years 45 cases of murder, 18 of culpable homicide, 8 of kidnapping and abduction, 5 of rape, 41 of dacoity and 57 of robbery with violence.

Crimes against,	1869	1870	1871	1872	1873	1874	1875
The State and public justice.	938	847	813	1,043	2,235	1,918	1,775
Person ...	8,840	10,040	10,385	8,339	6,445	6,750	6,114
Property ...	6,897	7,562	7,256	4,967	4,186	3,606	3,337
Special Laws ...	1,875	2,064	1,758	1,755	1,708	1,591	1,792
Total	18,160	20,173	20,312	16,015	14,184	13,865	13,018

The results of criminal trials are shewn in the subjoined table. The average duration of cases disposed of in 1875 was 4·2 days. Of 374 criminal appeals, 23 were rejected, 157 confirmed, 37 modified, 1 quashed, 139 reversed.

Head.	1869	1870	1871	1872	1873	1874	1875
Persons brought to trial	33,623	43,920	40,015	30,810	27,818	27,098	27,041
" acquitted	14,951	20,127	17,179	9,260	8,258	9,018	10,065
" discharged	5,778	9,445	10,233	5,167	3,147	3,48	2,852
" convicted	10,502	12,498	12,474	15,926	16,058	14,465	13,419

Prisons.—The present system of jail management may be described as dating from the construction in 1863 of the Bangalore Central Jail, an institution which not only serves as a model to the other prisons of the Province, but is widely known as second to none in India. The accommodation is intended for 1,000 prisoners.

Previous to the period spoken of, the able-bodied convicts were employed in making roads, and lodged in what were called Road or Camp Jails. These

consisted of nothing more than temporary sheds, the materials of which were pulled down, carried on, and re-erected as the place of encampment was changed. In the Chitaldroog District, convicts of the artisan class were employed in a workshop, to make up the iron and wood work for travellers' bungalows and other public buildings. At Bangalore and Mysore were jails of a more permanent character. In the former was the Town Jail, consisting of separate wards for felons, debtors, and insane; and the Fort Jail. The Town Jail was removed in 1853 from a low and crowded part of the Petta to a more airy site near the northern gate, obtained by clearing the old boundary hedge. The building was entirely of stone, on the native principle of construction, and was capable of holding 400 prisoners. The Fort Jail was originally a temporary thatched building, situated near the Mysore gate of the Fort. This was also rebuilt on the same principle as the Town Jail, with accommodation for 292 inmates. It was specially used for the confinement of Thugs sentenced to long periods of imprisonment.

The prison diet was $1\frac{1}{4}$ seer of ragi and $\frac{1}{4}$ anna in cash for each working day, and 1 seer of rice, with the same money allowance, for Sunday. Out of the money, the prisoners were allowed to purchase for themselves salt, pepper, chillies and other condiments to savour their food with, but care was taken to prevent their having access to drugs, opium, or spirits. The working hours were from sunrise to 3, with an hour's rest at noon. There was no labour on Sunday, when oil and soap-nut were served out to each man for ablution.

At the close of 1875, there were 8 jails and 80 lock-ups, containing altogether 1,767 prisoners (1,680 male and 87 female), distributed in the following manner.

Prisons.	Convicts.	Under trial.	Civil.	Total.
Central Jail	693	4	7	704
District Jails	809	43	15	957
Taluk Lock-ups	45	61	0	106

The guarding and maintenance of prisoners for that year cost over $1\frac{1}{2}$ lakhs, the average annual charge per head for the several items being as follows :—rations Rs. 28—7—1, establishment Rs. 25—15—10, police guard Rs. 23—9—9, hospital charge Rs. 1—9—1, clothing Rs. 2—13—1, contingencies Rs. 4—12—8; or altogether Rs. 87—3—6.

All the prison labour is intramural. The value of manufactures in the Central Jail for 1875 shewed a profit of Rs. 8 per head of effectives. Education has for some years been introduced with good effect. In 1875 there were 610 prisoners under instruction; of the prisoners

received, only 13·5 per cent could read and write on admission, while of those who quitted jail, 19 per cent went out able to read and write.

Police—The necessity for an improved organization of the Police long attracted attention. The prevailing system was simply the old Kandachar improved upon by better supervision. The first step towards the reforms now in operation was the introduction, in 1866, of the Police Act V of 1861 into the Bangalore District, and the appointment of an officer of the Madras Police to the charge of the District. It was at that time contemplated to introduce the Madras system throughout the Province. But the new system, although favourably reported on after the lapse of a year, was found to entail a considerable increase of expenditure. It moreover possessed the radical defect of overlooking in great measure the existence of the Village Police, a class which, if properly organized and remunerated, is capable of performing useful service to the State.

The Government therefore resolved, in lieu of adopting the Madras system of organization, to begin the task of reconstruction by remodelling the village police, whose decayed condition called in the first instance for remedy. The patels and talaris had not sufficient remuneration; in some cases inams granted for the maintenance of village police had been alienated or diverted from that object: thus the village system had not been sufficiently cared for, and the superior advantages which the village officers possessed, with their local knowledge, over the regular police, in detecting or giving information regarding dacoits, &c., were not utilized. It was therefore considered necessary that the village institutions should be duly recognized in any comprehensive police system for the whole Province, with the view of securing economy and efficiency, especially as the number of persons registered as holding service lands from Government amounted at the time to 14,000.

Accordingly, the following principles were laid down as the basis of the scheme proposed for the whole Province.

1st. The Village Police should be restored to a condition of reasonable vigor and efficiency. Their duties should be carried on under the guidance of a few simple rules. Their remuneration should be at once provided for throughout the Province by rent-free assignments from unassessed lands, all questions connected therewith being left to be settled by the Revenue Survey Department in their due course of operations; an essential feature in this measure being the concession of magisterial powers in petty cases to competent heads of villages.

2nd. The Kandachar police should be superseded by a constabulary similar to that already introduced into Bangalore, but having the village police for its basis. The functions of the latter should be to act as auxiliaries to the former; and on it (working as it ought under the village headmen) should devolve the responsibility as well of reporting a crime as of discovering the criminal. No additional expenditure should be incurred, as the regular force need not under the circumstances be numerous, but the members should be well paid, and specially selected with the view of fitting them to assist the village police in detection. The relations of the village police with the regular police should be clearly defined, so as to utilize the former to the fullest extent; and so adjusted, that, while the due performance of their duties is secured, unnecessary interference on the part of the regular police in ordinary village affairs is eschewed.

3rd. The regular police need not be armed and drilled, as the local Barr Force (which is otherwise useful in guarding District and local treasuries, and thus largely relieves the police of some of its work) would well suffice for repressive purposes.

Rules drawn up in accordance with the foregoing principles were sanctioned at the end of 1872. During the following year the system was introduced throughout the Chitaldroog District, the only one completely surveyed and settled. But it was soon found that the re-constitution of the Village Police, which had but a nominal existence, would require time, as the men available for employment in the new constabulary being necessarily taken from those belonging to the old Kandachar force, required training for their new duties, and the village patels being generally illiterate were incapable of performing in a trustworthy manner the functions prescribed for them.

An *ad interim* measure was therefore introduced, in 1874, for the improvement of the existing force in the other Districts by the discharge of incompetent men and the introduction of an improved class on better pay, accompanied by a numerical reduction of the force. Provision was made for instructing all grades in police duties, and requiring the officers to pass an examination. By these special rules the District Police is now governed, while the Police Force of the Town and Cantonment of Bangalore is administered under Act V of 1861.

The Police Department is controlled by a Deputy Inspector General of Police, acting under the Judicial Commissioner, who is the Inspector General. In the Districts, the Deputy Commissioner is *ex officio* Head of the Police, and is aided by one of the Assistant Commissioners, who is

designated the Police Assistant. This officer, while primarily responsible to the Deputy Commissioner for the discipline and general working of the Police, is available for other general duties (excepting magisterial duties in connection with police cases) whenever such can be performed without prejudice to his own duties.

Every effort is being used to make the service popular. Station houses are being built wherever shelter is not available, and huts constructed where accommodation is not easily procurable. Patta is also given at hilly and ghat stations, and suitable clothing issued to the men of the Force.

The ordinary weapon of the Rural Police is a stout bamboo cudgel, about 1½ inch thick and 40 inches long, fitted with brass ferules at the ends, on one end of which the name of the peon and his number are engraved. A few fusils with sword bayonets have been issued, but the want of training to the use of fire arms on the part of the men, and the inadequate accommodation for their careful storage, have proved obstacles to the Force being more generally supplied with these weapons; but arrangements are now being made to issue them to men stationed in isolated localities where they are specially needed.

The sanctioned strength of the executive Rural Police of the Province in 1875—6, comprised 8 Police Assistants, 132 Inspectors and Sub-Inspectors, 700 petty officers, and 3,398 peons or constables; in all 4,238. Including the Police of the Municipal Towns and Cantonments, the total strength was 5,019. The number employed was; in Districts, 741 officers and 3,315 men; and in the Towns and Cantonment, 790 men: at a total cost of Rs. 5,73,513, of which Rs. 4,98,707 was payable from imperial revenues, and Rs. 74,806 from municipal funds.

The proportion of Police to population, exclusive of the Force employed in State services, was 1 to 1,053. In the towns the proportion was 1 to 311, and in the Districts 1 to 1,193. The general proportion of Police to area was 1 to 6 square miles. Of the officers, 36 are Christians, 254 Muhammadans, 567 Hindus and 13 others. Of the men, 32 are Christians, 1,430 Muhammadans, 2,505 Hindus and 9 others.

In 1875—6 there were 3,241 cases of cognizable crime in which the Police were engaged, and convictions were obtained in 2,081. The Police arrested on their own authority 5,391 persons, and under the Magistrate's orders 233. Of non-cognizable crime, the Police were employed in 525 cases, and arrested 687 persons, of whom 437 were convicted.

Public Works.

Under the previous Native Governments there was no Engineering staff as we now understand it, and the Administration which succeeded in 1831 made no immediate change in this respect. The Superintendents of Divisions and the Amildars of Taluks carried out all descriptions of work through Native Mestris and Mutsaddis attached to the taluks, and the maintenance of tanks and channels was always regarded as specially appertaining to Revenue officials. But the want of professional assistance in the matter of roads and bridges early pressed itself on the Administration, and the post of a Superintendent of Marámat was created in 1834. The attention of this officer was almost exclusively devoted to designing and executing original works.

In July 1854, the Court of Directors, in consideration of the prosperous condition of the finances of Mysore, desired that opportunity should be taken to execute "such works of unusual magnitude and importance as might appear calculated to promote in the largest degree the development of the resources of the country." Sir Mark Cubbon, in reply, proposed to construct the Mari Kanave reservoir, as the only large irrigation work coming within the scope of the Court's requirements; but as the Superintendents were "overwhelmed with the revenue and judicial business of their Divisions," and as the Commissioner had "daily and hourly forced on him the conviction of the utter breakdown of the attempt to maintain the roads by native agency without the necessary minute supervision of European Officers," he suggested that a Superintendent of Roads should be appointed, with a proper staff. After further correspondence, the Department of Public Works was constituted in June 1856, and consisted of a Chief Engineer and an Assistant Chief Engineer for the direction, and of five Executive Engineers, four Assistant Engineers, and eleven Upper and nineteen Lower Subordinates for construction.

The charge of the roads was completely handed over to the new Department. Not so however the tanks and channels, which were still left under the charge of Revenue officers. It was only by a species of lapse that the Executive Engineers found themselves in charge of such special works as appeared necessary from their own personal inspection, or as were brought to their notice by Revenue officers. The anomalies which thus sprung up were in a great measure put an end to in 1863, by a Committee which assigned the charge of tanks definitely to the

Revenue officers, with specific powers of sanction, reserving for the Department Public Works such works as called for professional supervision. This arrangement, though still practically holding good, is gradually giving place to a better system of tank management, which has been shewn to be necessitated by the tank-system peculiar to Mysore, involving as it does the solution of hydraulic questions of no ordinary difficulty, and demanding the services of a highly trained professional department.

After prolonged discussion, the Secretary of State for India approved of the formation of an Irrigation Department for carrying out the objects in view. By this arrangement, the Revenue officers remain as before charged with the up-keep of such tanks as are not immediately being dealt with by the Irrigation Department. These latter select specific series for immediate work, and bring the tanks composing them up to standard, to be afterwards made over to cultivators for perpetual maintenance, with the exception of works like waste weirs, sluices, &c., which require departmental management, and for which provision is made partly by annual grants and partly from the irrigation cess of two annas per rupee of wet land assessment. The avowed object of this plan is, that while the whole of the tanks in the country shall be brought up to a standard of safety, and their future up-keep thrown upon the most interested parties—the ryots—under stringent regulations, nothing but simple conservancy will of necessity be imposed on the succeeding Native Government, who will be thus enabled effectually to control the whole without the aid of a highly trained engineering staff.

So also for the irrigation channels under the Kaveri, Hemavati, Lakshmantirtha, and Shimsha rivers, a separate Channel Conservancy establishment was formed in 1864 under the supervision of Revenue Officers; and the Public Works Department only carried out such original works as necessarily required their supervision. But in 1870 the charge of the channels and the direction of the conservancy establishment was made over to the Superintending Engineer for Irrigation.

In 1873 the Public Works Department was separated into two distinct branches, one for Roads and Buildings, and the other for Irrigation.

In the matter of labour, Mysore has always presented serious difficulties, owing partly to the sparseness of the population (chiefly on the west and south), and partly to the fact that the great bulk of the

people are cultivators, whose presence on their own fields is generally called for at the very season when public works require to be pushed on with vigor. The attractions offered by the tea and coffee estates on the Nilgiris, in Wainad, Coorg, Manjarabad and Nagar, the advent of the Railway, together with the great extension of public works both imperial and local, and the impetus given to private undertakings of all kinds, have combined to raise the price of labour very high. As nearly as can now be ascertained from an analysis of the rates for labour at each decade during the past 40 years, it would appear that the price of unskilled labour has doubled since 1850, and that of skilled labour risen threefold.

At all times the labour needed for the repairs of tanks and channels has presented special difficulties, and under native rule was no doubt met by expedients not now available. In addition to the forced labour then resorted to, there was in many instances a tank establishment (*kere banks*) who, in return for certain lands held rent-free, were required to maintain buffaloes for bringing earth to the tank embankments. Whatever remains of this old institution is being put an end to, by the members being released from service and allowed to retain their inam lands on payment of a small quit-rent.

There were also bodies of men called Kámátis, who, in return for certain privileges, were liable to be called on for effecting repairs within their respective taluks; as also a corps called Khálhátis, who were organized for general service in all parts of the Province on road or irrigation works as might be required. The origin of this corps, which, among other privileges, enjoyed freedom from house-tax, is however of comparatively recent date. They were originally palanquin bearers, maintained by the State on the main road from Palmanair to Mysore *via* Bangalore, their services to travellers being, it is understood, rendered gratis. With the increase of travellers, and the introduction of other means of locomotion than palanquins, the specific employment for this corps ceased, and the men were as a body turned over to the Maramat in 1841, and afterwards to the new Department of Public Works. In 1860, the Kamatis and Khalihs were fused into a single corps of 10 companies, 100 strong each, with an establishment of Jamedars, Dafedars, Mutsaddis, &c. The annual cost of this corps amounted to Rs. 67,000. In this form, the corps, though rather reduced in numbers, is usefully employed on works to the west and north-west of the Province, where it is almost impossible to raise indigenous labour.

Cooly companies have at times been raised for specific purposes and short periods ; but they have been found more troublesome than useful, and the work turned out by them expensive. Moplas and other coast men are frequently found ready to undertake the construction of rough stone revetments on the ghat roads ; but in all other parts of the country indigenous labour has to be relied on.

Since 1862, the system of executing work by contract has been more largely resorted to than before. The practice of making advances, which had led to most unsatisfactory results, was done away with, and contractors were encouraged by payments made at short intervals on passed and approved work. While it must be conceded that in many cases bad work may have been passed and paid for, there is no doubt that advantageous results have nevertheless been attained. The system has enabled the Department to extend its operations more than would otherwise have been possible with its restricted establishment.

There are no means of ascertaining the sums expended on Public Works before the present century. There is, however, no doubt that considerable local expenditure was incurred in the construction of temples, palaces, and works for religious purposes, or for the shelter or convenience of travellers. Moreover, in the days of the old Palegars, much of the means and labour of the people were devoted to the construction of those hill fortresses called droogs, which are scattered all over the Province, and form one of its distinguishing features.

Narrow and tortuous village tracks, passing through dense forests, and over the mountains of the Western Ghats, served the purpose of roads. Over these, pack bullocks, bearing the little that had to be carried from one place to another in those days, pushed their way with considerable difficulty towards the coast. The only wheeled vehicles used in the plains were either the small *waddar* cart, or the great *hallu bandi* of the Malnad, both alike suited only to the small local requirements of the ryot, bringing in his supply of firewood, or carting manure to his fields.

There are a few bridges of singular construction which belong to this period, such as those over the two arms of the Kaveri river as divided by the island of Sivasamudra*, and those over the minor branch-

* Supposed to have been built 700 years ago, and repaired in 1820 by Ramaswami Medaliar, who received for his work the title of Lokopakaramtham Karta or "performer for the public good" from the British Government, and jaghirs worth 17,000 Rs. per annum in British and Mysore Territories.

es of the Kaveri at Seringapatam,* the bridge over the Kabbani river at Nanjangud,† that at Betmangala on the old Kolar road, and five other small works of the same class within the fortifications of the ancient city of Nagar or Bednur. But these, though doubtless of local value, formed no portion of a system of provincial communications.

The only works of this period which can be classed as having any extensive public utility are the tanks (which stud the whole surface of the maidan taluks), and river channels, in the construction of which, through many hundreds and possibly even thousands of years, an incredible amount of patient industry has been devoted.

At what particular period the tank system attained its full development, it is now quite impossible to say ; but judging from the necessary conditions of its growth, the progress could not fail to have been extremely slow, and most probably it expanded with the natural increase of population. It may be conjectured that the first civilized inhabitants taking possession of the higher grounds constructed the small tanks or kattes on the minor rivulets, and then step by step followed these down to the larger streams, arresting and impounding the water at every convenient site by throwing earthen bunds across the valley.

As according to the plan followed, it was possible to advance only steadily downwards from the watersheds of the various streams to their extremities, it may be conceived how vast a time would be expended in creating a single series as we now find of several hundred and in some cases over a thousand reservoirs, linked together in this fashion, and forming such continued chains of works that not a single drop of water falling on the catchment is lost in seasons of drought, and but little in ordinary seasons. To such an extent moreover was this system carried, that in many parts of the Province it would now be quite impossible to construct a new tank without interfering prejudicially with the rights of other older works on the same line of drainage. This vast series of works, in lividually varying in size according to local circumstances (from the great Sulekere tank in the Nagar Division, extending over 14 square miles, down to small kattes or village reservoirs), grew into existence necessarily without reference to scientific principles, and was purely experimental.

As belonging to the same period, the channels drawn by means of

* Supposed to have been erected in 1658.

† Supposed to have been constructed in 1727.

anicuts from the Kaveri, Hemavati, Lakshmantirtha, and other streams must here be noticed. The designs of these works are attributed to Rajas of old, and even to certain beneficent deities, and precise dates are assigned for the construction of several of them. But whatever the facts, it is at least clear that they are extremely ancient, and that however defective as tested by our modern ideas in these matters, their original construction exhibits a boldness and an appreciation of the conditions of structure, which, under the circumstances of the times, excite the greatest admiration. In addition to the anicuts now in use, the remains of probably more than three times as many others are still visible when the rivers are low. From some of these the original excavations made for the old channels are still apparent, while from others channels do not appear to have been excavated. It is therefore clear that the success that has resulted from the construction of the works that are still in use was not obtained without a very large proportion of failures, and the perseverance displayed by the constructors in spite of these failures is none the less remarkable, and shews the high value placed in former ages on irrigation works.

During the regency of Divan Purnaiya, 77½ lakhs were expended on public works, of which 31½ were devoted to irrigation works, but only 67,000 to roads, and this not till he had been 5 years in power. The former sum was to a great extent absorbed in the repair of old tanks and channels, the majority of which had fallen into a ruinous condition during the reigns of Haidar and Tipu. A further expenditure of 17½ lakhs was incurred on the project of a canal, now known as Purnaiya's Nala, whose object was to bring the holy waters of the Kaveri into Mysore and also Nanjangud, but which entirely failed in its intention. The other items of expenditure were—near 15 lakhs on construction and repair of forts, those of Bangalore and Channapatna being the principal works; 5½ lakhs on the Wellesley Bridge over the Kaveri at Seringapatam; above 3½ lakhs on traveller's bungalows, &c.; near 2 lakhs on maths, chatrams and other religious buildings; 1½ lakh on taluk catcheries and other civil buildings; 1½ lakh on Webbe's monument near the French Rocks.

For the period of the Maharaja's direct government, information can be gathered only from the condition in which public works were found at the time of the British assumption. From Colonel Green's report, it appears that there existed in 1831 only three roads in any way entitled to the appellation, *vis.*, the road from Naikneri to Mysore *via* Banga-

lore ; the road from Seringapatam to Sira and Bellary ; and the road from Bangalore to Harihar : and all of these were very indifferent, having portions running through swamps the passage of which would detain the baggage of a regiment an entire day ; other places bore the appearance of water courses with beds of river sand, the soil having been washed away far below the level of the surrounding country. The better order in which some few portions were preserved was in a great measure neutralized by the almost total absence of bridges, which in a country like Mysore, situated between the two monsoons, was a most serious inconvenience, and throughout the year kept the progress of the merchant, or the traveller, perpetually liable to interruption. It was no uncommon thing for a regiment, or even the tappal runners, to be detained for several days at a nullah not 16 miles from Bangalore, and there were several other such impediments on different places on the three roads, where lives were annually lost to a considerable extent.

There was not, at the time of the assumption of the country in 1831, a single pass through the Western Ghats practicable for cattle with loads. At the Agumbi pass in the Nagar Division, which was the most frequented, it was usual to carry everything of value on coolies, the hire for which was $\frac{1}{2}$ a rupee per bullock load. Thus when the bales exceeded the number of porters, who were a peculiar caste of men of a limited number, or when the latter were away at festivals, it was not an extraordinary thing for a merchant to be detained at the ghat ten days or a fortnight, before his turn came or there were means available by which his goods might pass the ghat. The approach to the head of the pass was marked by lame cattle, bleeding and bruised, with horns broken off in scrambling about the stones on the pass, while the atmosphere was tainted with the effluvia of the carcasses of bullocks which, taxed beyond their strength, had perished by the way.

As regards irrigation works, in some cases where the Raja's Government had attempted to arrest the decay accruing to a tank, the measures adopted had an opposite effect to that which was intended ; the remedy was worse than the disease, in reality accelerating the failure of the bund it was desired to preserve. This arose from the intentional mismanagement of the parties employed to carry the earth repairs into effect, whose object, if paid for their labour, was to secure, by the breaching of the bund they had been engaged to strengthen, another and more advantageous contract the following year ; or when

as appears to have been the more usual mode of executing Sarkar work, they were not paid at all, to get through their forced labour as easily as they could.

From 1831—1856 the sum of 30½ lakhs was spent on irrigation works, 28½ lakhs on roads, and 6 lakhs on buildings. As regards the first, individual works were much improved, and many almost wholly reconstructed from the ruinous condition into which the Maharaja's Government had allowed them to drift ; yet little advance was made on the native method of maintenance, because the interdependence of the tanks, and the necessity for dealing with them in series, was not sufficiently recognized and acted upon. So also with river channels, although some improvements were introduced, such as the construction of brick facings to some of the anicuts when under repair, yet most of the radical defects in these works were left without remedy.

With regard to roads and bridges the case however was different. The roads constructed at this period not only connected all head quarter stations with Bangalore, but some of them were great through lines, extending on all sides to the frontiers of the Province. Altogether 1,597 miles of road, with 309 bridges, and 1,998 drains were constructed in the Province after the transfer of Government and before a regular Department of Public Works was organized.

Among the miscellaneous works executed was the commencement in 1853, and in great part completion, of flying and permanent electric telegraph lines,—one from Attibele near Oosoor to Rampur on the Bellary frontier, being a length of 191 miles ; the other from Bangalore to Kankan-halla on the Nilgiri road, length 143 miles—at a cost of Rs. 1,03,639 for the lines, and Rs. 8,253 for offices at Bangalore and Mysore.

Since the formation of the Department Public Works in 1856, the expenditure for 20 years under the several heads, exclusive of establishment, may be thus stated:—

Class of work.	Original works.	Repairs.	Total.
Military	1,77,233	37,563	2,14,796
Civil Buildings.	23,96,501	3,23,450	29,19,951
Agricultural and Irrigation	18,73,975	34,06,202	52,80,177
Communications	45,63,658	51,11,255	96,74,913
Miscellaneous Public Improvements	7,48,722	70,712	8,19,434
Total Rs.....	92,60,089	89,49,182	1,89,09,271

Under *military*, the chief expenditure was due to the construction in 1865—6 of a new Cantonment for a Native Infantry Regiment at Mysore, which, however, had subsequently to be abandoned owing to the unhealthiness of the situation.

Of *civil buildings* the largest works are the Public Offices at Bangalore, built between 1864 and 1868, at a cost of Rs. 4,27,980 including site; with the Central Jail and the Bowring Civil Hospital, built in 1867, at a cost for the former of Rs. 46,047 and for the latter of Rs. 2,16,454. More recently, at Bangalore, the Raja's Castle, Government House, the Division Cutcherry, and the Central College (late High School) are prominent buildings which have in great measure (especially the first, not yet completed) been rebuilt according to ornamental designs, costing altogether about 2½ lakhs. With these may be mentioned the Museum, the Post Office, and the Government Press, costing together nearly 1 lakh. Cutcheries at head quarters of Districts for Deputy Commissioners, at Sub-division head quarters for Assistant Commissioners, Courts for Judicial Assistants, Taluk cutcherries, District Jails (that at Shimoga costing over 1 lakh) School houses, Civil Hospitals and Dispensaries, offices for Executive Engineers at District head quarters,—are various classes of structure which have provided throughout the country suitable accommodation for the several branches of public business involved.

In the category of civil buildings falls also work done to public monuments and religious buildings. The chief work here was the repair and re-painting of Tippu's Summer Palace, known as the Dariya Daulat, at Seringapatam, under orders issued by the Marquis of Dalhousie in November 1855. The work, which was almost entirely of an artistic character, *viz.*, repainting the picture of Baillie's defeat, renewal of the interior enrichments, &c., was well completed in a little over three years at an outlay of Rs. 37,000. Under the same authority Rs. 2,000 were expended in 1859 in replacing the inlaid doors and executing other work to the tombs of Haidar and Tippu at Seringapatam. Rs. 5,491 were spent in restoring the roof and otherwise preserving the celebrated temple of Halebid.

Of works of *irrigation*, included under the head Agricultural, the following are some of the principal that have been executed :—

	Cost Rs.
Rebuilding the Srirumdevar anicut on the Hemavati, and improving channel below	... 2,78,504
Do Maddur anicut on the Shimsha, and do.	... 85,365
Do Marchalli anicut on the Lakshmantirtha and do	... 29,339
Aqueduct over the Lokapivani on the Chidevarayi sagar channel	... 22,235
Rebuilding the Lakshmanpura anicut on the Nugu	... 12,878
Do Hahalli anicut on the Gurdal	... 10,424

A very important principle was introduced in these works, *viz.*, the substitution of solid watertight anicuts for that under the old native construction, which consisted entirely of packed stone, without the requisite coherence, and carried with it the elements of destruction, while it allowed nearly all summer water to escape through unutilized. The application of sound methods of construction to these works, and to the regulation of channels below them, as also the distribution of water for irrigation, may be said to have created quite a new era in the channel system of Mysore.

In 1872—3, a grant of 108 lakhs, inclusive of establishment, was assigned for expenditure on irrigation in the next 12 years, namely, 72 lakhs for tanks and 36 for channels.

Under *communications* the expenditure has been laid out either in the construction of new roads or in rectifying and improving old ones, as well as in the construction of large bridges. In 1875—6 there were 1552 miles of road maintained by the Department at an expenditure of about 3 lakhs, and at the rate on the average of Rs. 193 per mile, including the travellers' bungalows and inspection lodges. The two new ghats, *viz.*, the Búnd and Haidarghar are most important additions to the provincial communications, and complete six outlets for cart traffic between Mysore and the western coast. The last, which is nearly finished, and is laid out at easier gradients than any other, promises to be of special importance, as it stands in direct connection with a well studied network of roads designed to open out the whole of the Nagar Malnad. This tract of country, so rich and fertile in its supari gardens, was most difficult of access, and presented a serious barrier to all communications with the coast. When opened by these lines the whole Province to its remotest corner will be in communication with the western coast.

The construction of numerous bridges has also devolved on the Department Public Works, in connection with both the old and the new lines. These are so numerous that only the very largest need here be noticed, from among those which have been constructed since 1856. Subjoined are particulars concerning four such works :—

Name of Work.	Over what River.	On what Road.	Materials of Construction.	Number and dimensions of spans.	Date of completion.	Cost Rs.
Harihar bridge	Tungabhadra...	Bangalore to Dharwar	Stone and Brick	14 elliptical spans, 60' each	1868	3,48,096
Saklespur do	Hemavati ...	Bangalore to Mangalore	Iron	4 spans, lattice girders, 120' each, on cylinders	1870	1,94,620
Shimoga do	Tunga ...	Bangalore to Honnore	Brick	16 arches of 50 feet span each	1859	1,07,538
Benkipur do	Bhadra ...	Do	Do	13 arches of 50 feet span each	1860	74,997

Under *miscellaneous public improvements*, the works have as a rule ceased since the introduction of municipal institutions, and are confined to exceptional cases in which the assistance of Government is given in the shape of a grant-in-aid. All the large towns have benefited more or less, but Bangalore above others, as being the seat of Government and the most important town in the Province. Nearly 2½ lakhs were spent on the central channel of the Cantonment Bazar, and in the construction of a self-regulating main sewer which runs alongside and transfers all sewage to a considerable distance from the town. The largest works recently undertaken are the Water Supply projects for Bangalore and Mysore, the estimates being about 5 lakhs for each.

The increasing revenue derived from District Local Funds has enabled the transfer to that head of the maintenance of subordinate lines of road, besides providing the means of extending cross roads. Including the transferred lines of road, there were at the end of 1875—6, an aggregate of 2,243 miles for which maintenance allowances were provided out of District Funds. During the first few years, while there existed inadequate means for laying out roads of this class, framing the estimates and subsequently executing the work, the results were in many respects unsatisfactory; but of late, arrangements having been made for entrusting the designs and setting out of the work to Executive officers, while the work is carried into execution by local agency, under the Revenue officers, great improvement is looked for. The Public Works Department, moreover, construct all bridges over 20 feet span on District Fund roads.

Railway.—Though not connected with the Mysore Department of Public Works, the Bangalore Branch Railway, opened on the 1st August 1864, claims to be here mentioned as a most important means of com-

munication, which has had a great effect in stimulating traffic and awakening enterprize. The line is $84\frac{1}{2}$ miles long, of which 53 are within the limits of Mysore. It has 3 stations in this State, besides the terminus, and joins the Madras main south-west line at Jolarpet.

A survey for an extension of the line to Tím-kúr, a distance of 43 miles, was made in 1863—4. It was calculated that only 2 large bridges would be required for this portion, that the worst gradient would be 1 in 80, and the entire cost for a first class railroad, including stations, permanent way and rolling stock, would be 70,000 Rs. a mile. The question continued to be discussed till 1867. But a preliminary point for determination was, whether the line should be extended from Bangalore so as to form a junction with the north-west line from Madras to Bombay, or should be confined to a railway system within the limits of the Province. The former would be the most costly, as involving the retention of the existing gauge. The project which most commended itself at the time, was the prolongation of the present line to the central trade emporium of Tiptur, 80 miles west-north-west of Bangalore. For this trunk line, on the standard gauge, the cost, it was estimated, would be about 40 lakhs of rupees. From Tiptur it was proposed to construct a series of narrow gauge lines, reaching to various points from the Wynad frontier in the south-west to the Canara and Dharwar frontier in the north-west, and embracing the whole province in a network comprising nearly 500 miles of railway, the outlay on which was estimated at 26 lakhs of rupees.

In 1870—1, after careful deliberation, a system of light railways, to connect Bangalore, Tím-kúr, Tiptur, Hassan and Mysore, was determined on as the most suitable to meet the requirements of the country. In accordance with this scheme, the project of a metre gauge State Railway, from Bangalore to Mysore direct, as one link of the chain, was at once proceeded with, but the following year postponed. The preliminary survey and arrangements had, however, all been completed, and much of the material collected along the course of the line.

Subjoined are the statistics of traffic on the Bangalore Branch Railway since its opening, as furnished by the Agent of the Madras Railway :—

Year.	No. of passengers.	Receipts from—		Working expenses.
		Passengers.	Goods.	
1864—5*	91,868	Rs. 1,47,545	Rs. 1,94,456	...
1865—6	183,655	2,13,228	3,81,721	...
1866—7†	185,272	1,99,288	4,62,637	...
1867—8	188,195	1,96,955	...	...
1868—9	186,266	1,98,307	3,52,265	Rs. 3,54,504
1869—70	195,814	2,04,157	3,39,853	4,17,902
1870—1	186,636	1,88,675	2,66,263	3,41,094
1871—2	170,444	1,75,279	3,06,751	3,04,864
1872—3	203,233	2,07,219	3,58,430	3,38,795
1873—4	225,563	1,84,099	4,09,065	3,98,751
1874—5	204,596	1,83,302	3,41,697	3,93,583
1875—6	197,271	1,77,376	3,28,439	4,50,160

The details of the passenger traffic for 1875—6 shew that there were 2,307 first class passengers, who paid Rs. 17,984 ; 5,301 second class, who paid Rs. 16,973 ; 123,638 third class, who paid Rs. 1,12,266; and 66,025 cooly class, who paid Rs. 30,152.

Public Instruction.

The formation of Educational Departments in the different provinces of India had its origin in the celebrated despatch from the Court of Directors of the East India Company, dated the 19th of July 1854. Correspondence on the subject passed between the Government of India and Mysore during 1855, and towards the close of the following year, a scheme of education was drawn up by the Honourable Mr. Devereux, Judicial Commissioner, which received sanction on the 6th of February 1857.

The previous steps taken by the Mysore Administration toward promoting education, had been to supply funds to the Wesleyan Mission for the establishment of schools at the principal district head quarter stations and for the erection of premises. The oldest was a Canarese school at Tûmkûr, established in 1842. One was opened at Shimoga in 1846. In 1851 was established the Native Educational Institution in Bangalore, for instruction in English, with a Government grant of Rs. 800 a month ; and English schools in 1852 at Tûmkûr and Hassan, and in 1854 at Shimoga, these three together receiving about Rs. 500 a month. Besides these, were two schools at Bangalore of a special character, supported by Government, the Mutucheri School for

* 9 months.

† 11 months.

children of pensioned European soldiers (now St. John's District Schools), and the Tamil Hindu Female School. At Mysore, His Highness the late Maharaja maintained an English Free School. The entire Government expenditure on education in 1855 was about Rs. 16,500 a year.

'On the whole—observes Sir Mark Cubbon of this period—"it must be admitted that the Administration of Mysore makes no particular show under the head of education. In an abstract point of view this is of course to be regretted, but subject nations are not kept in order and good humour on abstract principles, and it has long been the opinion of some, and is rapidly becoming the opinion of many, that the efforts which have been made by Government to extend the blessings of education, and by tests and examinations to secure the services of enlightened men even in the lowest posts, are not calculated to be so fully appreciated as they ought by any class of the community.'*

The new scheme contemplated the establishment of 80 Vernacular schools, one in each taluk, of 4 Anglo-Vernacular schools, one in each Division, and eventually of a Central College. For the training of teachers, 2 Vernacular Normal Schools were provided, and rules framed for grants-in-aid to private institutions. For examination of the schools, there were to be 2 Inspectors, 4 Deputy Inspectors and 20 Sub-Deputy Inspectors. An assignment of 1½ lakh per annum was made for the Department, of which 5 per cent was allotted for grants-in-aid. In pursuance of these arrangements, a Director and an Inspector were first appointed. In 1858, a High School affiliated to the Madras University was established at Bangalore, the sum paid to the Native Educational Institution being withdrawn; while the Tunkūr, Shimoga and Hassan Schools were taken over by Government, forming the basis of Divisional Schools, His Highness' School at Mysore occupying the place of a fourth.

In the matter of establishing vernacular schools, it was designed to leave the initiative in the first instance with the people. Schools were to be established only in places from which applications for them were received, and an undertaking entered into that the prescribed fees would be paid. Should no such application be forthcoming, the State was to move in the matter, by setting up a few schools experimentally in those towns which appeared the most favourable for the purpose, in order that the public might be familiarized with the scheme. Should even this fail to draw sufficient attention to the subject of popular education, an

* These views, it is just to add, bear date in the time of the mutiny.

official notice was to be published that no candidate would be eligible for any Government employment of which the salary was Rs. 6 a month or upwards, who could not read and write his own vernacular. A powerful incentive, it was considered, would thus be provided for obliging the people to send their children to school. But although for two years not a single school was applied for, matters never went to this length. During 1859—60 fifteen applications came in from different taluks. The end aimed at in the system of Government education at the period referred to was expressed by Sir Mark Cubbon in the following weighty words. 'While the higher and more ornamental parts of education are by no means neglected, the greatest care is taken to store the pupil's mind with the knowledge which will prove most advantageous to him in his passage through life, and above all which will tend to reconcile him to his condition, and teach him to act uprightly and speak the truth.'

In 1861 a Normal School was established at Bangalore, with English and Canarese branches, and in 1862 an Engineering School, for the purpose of training subordinates for the Department of Public Works. In 1863, the Educational Department, which was at first under the Judicial Commissioner, became separate. In this year the first candidate from Mysore matriculated from the High School: but it was not till 1865 that the University course of study was formally adopted. In 1866, the growing number of schools made it necessary to appoint an Inspector, an office which had been vacant for five years, and this resulted in a proper graduation of the various schools, the introduction of prescribed courses of study (which in the higher class of schools were designed to lead to matriculation), and the institution of an examination for teachers' certificates in the Normal School; thereby considerably raising the character and standard of teaching throughout the country.

Thus far, higher and secondary education had principally received attention, when, in 1868, the Hobli School system, providing a comprehensive scheme of primary education for the masses, was introduced, marking an era in the development of the Department. A general estimate shewed, that allowing for schools of all kinds, 200,000 boys alone of an age to attend school, not counting girls, were without ostensible means of instruction. For the numerous classes of traders, ryots and minor officials who lived out of the principal towns, all the instruction available was that imparted in the indigenous schools, scattered over

the country in more or less abundance. The teachers were, with few exceptions, illiterate, and possessed very slender claims, if any, for their office other than that acquired by hereditary succession to it. Ignorant as they often were however, and incompetent, they were regarded with respect by the people among whom they and their forefathers had lived ; and it was certain that any popular scheme of education in which these men should have been set aside or supplanted would have encountered a formidable resistance which would have been fatal to its success. On the other hand, by recognizing and making use of them, the sympathy of the people was enlisted in favour of the new project.

The system proposed was to establish a school for boys and girls in each hobli or taluk sub-division, the estimated number of hoblis being 645, with an average area of 41 square miles, and a population of 6,040 persons. The masters were to be men selected from among the teachers of existing indigenous schools, and trained for their work in normal schools, of which one was provided for each of the three Divisions. While under training every man was to receive a maintenance allowance of Rs. 5 a month, and on appointment to the charge of a school his salary was to be Rs. 7, with prospect of promotion. Care was taken to nominate the men as far as possible to the localities in which they were known and thus had influence. The schools were to be examined three times a year by Sub-Deputy Inspectors of whom one was designated for each of the eight Districts, and Local Committees of influential residents in each hobli were further to exercise a general supervision. No fees were to be levied in the schools, but the education would be paid for by a cess. The people, however, were expected to build or provide premises, as an earnest of their desire for the schools. Night classes were to be formed for the benefit of those who were unable to attend school during the ordinary hours of labour ; students in these classes paying a fee to defray the expense of lights.

To meet the cost of the scheme a cess of one per cent was intended to be levied as the land settlement in each District was completed by the Survey Department. But subsequently the Local Funds being constituted on their present basis as previously described, in 1872—3 the proportion of 24 per cent from the entire Local Fund cess was allotted for Hobli and Village schools. This has admitted of the expansion of the scheme, which has all along enjoyed marked popularity and success, and an aggregate of 750 such Schools has thus been provided for, with an examining staff of 15 Sub Deputy Inspectors.

In 1875 the upper department of the Bangalore High School was formed into a Central College and in connection with it a School of Engineering and Natural Science established on an entirely new footing, for the purpose of training selected Natives for both the officers and subordinate grades of the Public Works, Forest and Revenue Survey Departments.

Meanwhile the number of private schools aided by the State has continued greatly to multiply, and the character of their instruction, influenced by the general elevation of that imparted in Government institutions, has been vastly improved.

The following figures will serve to illustrate the growth and expense of the Department in two decades, and before and since the allotments made from Local Funds :—

Year.	No. of Schools.	No. of Pupils.	Charges to Government.	Receipts from fees and other sources.	Net cost to Government.		
					Total.	Per Pupil.	
<i>Before the formation of the Educational Department.</i>							
1855—6	8	1,108	16,580	2,566	Rs. 16,580	Rs. 14	A. P. 15 5
<i>After the formation of the Educational Department.</i>							
<i>Government Schools.</i>							
1862—3	13	990	29,729	3,517	26,212	26	7 7
1865—6	49	2,408	49,188	12,677	36,511	15	2 7
1872—3	639	19,437	1,37,855	1,10,785	27,070	1	6 2
1875—6	730	27,711	1,84,333	1,31,387	53,156	1	14 8
<i>Aided Schools.</i>							
1862—3	14	1,383	7,940	6,268	7,940	5	11 10
1865—6	33	3,234	25,561	29,418	25,561	7	14 5
1872—3	98	6,900	41,109	77,225	41,109	5	5 10
1875—6	114	8,598	46,721	78,769	46,721	5	6 11

Of the results obtained in the higher branches of study, the following figures may serve as an illustration. From 1863 to 1876, it appears that about 420 students from Mysore Schools have matriculated at the Madras University, 120 have passed the First in Arts examination, 20 have obtained the degree of Bachelor of Arts, 15 that of Bachelor of Laws, one that of Master of Laws, and one that of Master of Arts.

The Educational Department is controlled by a Director of Public Instruction. There are three principal circles of inspection, two in charge of Inspectors, and the third in charge of a Deputy Inspector.

Subordinate to these are 2 Sub-Deputy Inspectors for Hindustani Schools, and 15 for Hobli and Village Schools. The instructional agencies consist, on the part of Government, of a Central College at Bangalore, with a School of Engineering and Natural Science, and a High School, attached, containing together 538 pupils; High Schools at Mysore and Shimoga, educating up to the standard of the First Arts examination, with 562 pupils; 5 District Schools, educating up to the University Entrance standard, with 601 pupils; 5 Taluk Anglo-Vernacular Schools with 213 pupils; 39 Taluk Vernacular Schools of a higher and 67 of a lower class, with 6,193 pupils; and 592 Hobli or Village Schools, containing 18,068 pupils; together with 9 Hindu Female Schools and 4 vernacular Normal Schools: making a total of 730 schools, with 27,711 pupils. The private schools aided by Government are 114 in number (81 for boys and 33 for girls), with 8,598 pupils; and the unaided indigenous schools are returned at 1,350, with 17,882 pupils. By adding the whole, it appears that there are 2,194 schools in the Province of all classes, giving instruction to 54,191 pupils,* or 1 in 93 of the population. The boys under instruction number 50,846, and the girls 3,345; of the former, 33,005, and of the latter, 3,304, are being taught in Government or Aided schools. The pupils of these two classes of schools consist of 30,631 Hindus, 3,640 Muhammadans, and 2,038 others, which includes 883 Europeans, 581 Eurasians and 574 Natives.

Medical.

The medical institutions maintained by the Mysore Government in 1875 were the following:—

General Hospitals, with dispensaries attached:—Bowring Civil Hospital, Bangalore; Raja's Hospital, Mysore; Civil Hospital, Hassan.

Special Hospitals:—Lunatic Asylum, Leper Hospital, both at Bangalore.

Dispensaries, with wards for in-patients:—Kolar, Hassan, Chitaldroog, Chikmagalur; for out patients only,—Bangalore Pete, Chik Balapur, Tunkur, Hariharpur. One at Shathalli, belonging to the Roman Catholic Mission, is aided by a Government grant.

The Surgeon to the Mysore Commission is stationed at Bangalore, and has charge of the Bowring Civil Hospital and the two Asylums, as well as the general control of vaccination, while another medical officer

* This does not include the regimental schools, under the military authorities, which are 7 in number and contain 970 pupils. These being added, which, seeing that the military are included in the census of the population, is but just, we obtain a grand total of 55,161 pupils (51,613 boys and 3,548 girls) under instruction, or 1 in 91.6 of the population.

is Superintendent of the Central Jail and has the supervision of the Pete Dispensary. There is a Civil Surgeon at the head quarters of each of the other two Divisions, who is also Superintendent of the local Jail and inspector of all medical institutions within the limits of the Division. The Deputy Surgeon General, Indian Medical Department, for Mysore and the Ceded Districts, personally inspects the institutions at head quarters at Bangalore, and others which happen to lie in the routes of his official tours. He also acts as Sanitary Commissioner and Registrar of vital statistics.

During the period of the late Maharaja's government, there was a Darbar Surgeon attached to the Court, who superintended His Highness' Hospital at Mysore. After the assumption of the government by the British, a dispensary was established in 1833 in a room in the Commissioner's Office in the Fort of Bangalore, and in 1834 one in the Cantonment. In 1839 a Hospital and dispensary were commenced in the Pete on a small scale, but proved so popular and useful that a suitable building, with accommodation for 50 patients, was erected in 1847. In 1849, the Fort Dispensary was also provided with a proper building. In 1850, a Hospital was opened at Shimoga. In 1852, a Hospital for 70 in-patients was established in the Cantonment Bazaar, and the Pete Hospital was enlarged. A further addition to the latter was made in 1856, and in that year the Yelwal Dispensary, established in connection with the Residency, was transferred to Hassan. In 1866, the Pete Hospital was further enlarged, but meanwhile the Bowring Civil Hospital was under erection in the Cantonment, on the plan of La Ribouisière in Paris, which admits of the segregation of the several castes of people and of different classes of disease. It was occupied in 1868, and in 1872 the Pete Hospital was converted into a Dispensary, in-patients being transferred to the Bowring Hospital.

The numbers under treatment by the Medical establishment have steadily increased every year, the totals for two decades being as given below :—

	Bangalore.		Outstations.		Total.
	In-patients.	Out-patients.	In-patients.	Out-patients.	
1855—6	1,696	11,243	381	6,198	19,518
1885—6	1,800	18,711	...	...	...
1875—6	1,482	47,604	1,863	68,044	118,993

The diseases for which treatment is chiefly sought at the medical institutions of Government are skin diseases, fevers, diseases of the eye,

injuries, dysentery and diarrhœa, respiratory and venereal diseases. Among skin diseases, scabies is the most common; among fevers, the paroxysmal type; among affections of the eye, simple and catarrhal ophthalmia; among affections of the respiratory system, bronchitis is perhaps the most prevalent.

Fevers are the chief cause of mortality in the Province, not less than 30,000 deaths occurring from this cause alone annually, which, considering that this is not ordinarily a directly fatal class of disease, will convey some idea of the extent to which it prevails. Dengue was a peculiar type that appeared in 1873 and reached its height in March. It was most severe in Mysore and Seringapatam, proving fatal in some instances.

Cholera carried off the greatest number of victims in 1866—7, when 13,504 deaths were reported from this cause. The cholera years since have been 1871—2, with 4,297 deaths, and 1875—6, with 3,139. The minimum of deaths from this disease was in 1874—5, when there were only 2, 5 in 1868—9, 12 in 1873—4, and 51 in 1872—3. The outbreak of 1866 was attributed to the scarcity or famine, and was general. Of the course of the disease in 1870—1, the following remarks are taken from the Deputy Surgeon General's report.

The first cases of cholera were reported in April, and were supposed to have been imported from the Salem District, where, and in Southern India generally, the disease prevailed at the close of 1869 and commencement of 1870. The disease during 1870 fell with the greatest intensity upon the eastern Districts of the Province, and notably upon the Cantonment of Bangalore itself a few ripples only of the storm-wave reaching the western Districts. There was an apparent lull altogether at the close of the year. The months of June, July and August were those in which the disease prevailed to the greatest extent. But at the close of January 1871, cases were reported from the western districts, the disease having, it is alleged, been re-imported from the Western Coast, where it prevailed with some intensity at the close of the year 1870. From this period the disease extended its ravages. It invaded the Districts of Mysore and Hassan; and the mortality was heavy. It was not till the 15th February that undoubted evidence was obtained of the disease having appeared at Hunsur in an epidemic form, and it was reported to have been introduced by travellers from Cannanore. From Hunsur it spread to Fraserpet, being introduced, it is alleged, by cartmen frequenting the distillery there. About the time of its appearance at Hunsur, reports came in of deaths in different taluks of the Ashtagram Division. The first death in

the town of Mysore occurred on the 22nd February, and the disease speedily spread and expanded itself very much in the Ashtagram Division. A few deaths occurred in towns on the high road to Bangalore, on dates subsequent to the first death at Hunsur. The disease in fact occupied principally, indeed almost entirely, the Districts which were spared in 1870, while those which experienced the main incidence of the disease in that year escaped in 1871. The Districts of Mysore and Hassan suffered to the greatest extent. The deaths in the former amounted to 2,156, or in the ratio of 2.9 per mille of population. But the Yelandur Jaghir suffered far more than any taluk under the direct administration of the Mysore Government. The deaths therein were 708 out of a population of 25,765 souls, or in the ratio of 27 per mille.

In regard to the question of invasion and propagation, whether by human intercourse or by prevailing currents of wind, every medical report received speaks of introduction from infected localities by travellers. At the close of 1870 the disease was known to prevail on the Western Coast, and at the time the first warning notes of its possible invasion by one or other of the main lines of intercommunication were sounded, the prevailing winds were easterly; north of east in January, east veering to south east in February and March. Now in these months the disease certainly advanced in an easterly direction, against the prevailing currents of wind. But later in the year, when the disease attained its acme of intensity in the months of June and July, strong south-west winds prevailed. We do not notice as coincident with the setting in of the south-west monsoon any extension of the epidemic to the eastward. On the contrary, the eastern Districts which had felt the weight of the pestilence in 1870, almost entirely escaped. In the Nundidroog Division, for instance, the deaths were only in the ratio of 0.46 per mille of population.

An interesting fact may be noted in connection with the extensive prevalence of the disease in Mysore, Seringapatam, Ganjam and surrounding villages. On the fact becoming known to the Officer commanding the 30th Regiment at the French Rocks, that small station was as far as possible put under quarantine. A cordon of sentries was thrown out round the station, travellers were diverted, and communication between the inhabitants of the bazars and neighbouring infected villages as far as possible prevented. The station entirely escaped, while villagers within a few miles were suffering heavily. Had the extension of the pestilence been due to aerial currents, the French Rocks could scarcely have escaped, while the measures taken were precisely those calculated to prevent its introduction by human intercourse.

In this year the special sanitary regulations now in force were brought into operation at all fairs, religious festivals and other large gatherings of people.

The spread of cholera in 1875 is thus described. Two sporadic cases occurred in May in the Hassan District, and on the 14th July the disease, imported from Coimbatore, appeared at Gundlupet, 70 miles south of the town of Mysore. Subsequently the Province was invaded by cholera imported from the Bellary and Kadapa Districts. In September the violence of the epidemic reached its acme. In this month all the Districts excepting three, in October all but one, and in November one and all, were affected. In December there was a marked reduction in the aggregate of mortality. Cholera attacked Bangalore in September, and in November the mortality amounted to 225, and in December to 95. Only 13 casualties occurred in the Pete (Town) of Bangalore. The ratios of deaths per mille in the Cantonment and Town of Bangalore were 3.89 and .21 respectively. In the town of Mysore, the mortality was 534, equal to 9.24 per mille of the population. Shimoga lost 11.69 per mille from the epidemic. The total mortality registered amounted to 3,139, of which 1,828 were males and 1,311 females. The largest mortality occurred in the Mysore District.

The deaths from small pox, which had ranged from 350 to 400 in the three years previous, rose to 1,494 in 1871—2, and to 4,532 in 1872—3, when the epidemic reached its height. The numbers have progressively declined each year since, being 3,052 in 1873—4, 1,535 in 1874—5, and 544 in 1875—6.

Vaccination.—Private inoculators are stated to have been formerly pretty numerous, but by 1855 they had been completely deprived of their occupation by the preference given to the Government vaccinators. These were 54 in number, and were transferred from taluk to taluk as necessary. There were three grades, on the respective pay of 8, 10 and 12 rupees a month. Each vaccinator was expected to vaccinate 10 persons for each rupee of his pay, or suffer a proportionate fine. A small money reward was given at the end of the year to the most active vaccinators of each Division. Under this system the number of operations increased with suspicious rapidity. The total of 62,257 in 1855—6, rose to 91,404 in 1857—8, and was little below a lakh in 1862—3. It became notorious, that with the connivance of the village officials the verification lists sent in by the vaccinators were frequently fictitious. The project was then formed, in 1865—6, of making them work in a more systematic manner through their ranges, proceeding from village to village in regular succession; and as by this mode of proceeding some difficulty might be found in making up the required complement, the stipulation as to the number of operations to be performed monthly was

withdrawn. The total, which had fallen in that year to 88,054, went down in 1866—7 to 73,793. Since that time it has steadily risen, until in 1875—6 it again touches a lakh. In 1872—3 a system of inspection, by the apothecaries attached to the camps of Deputy Commissioners, was introduced as a check, which appears to have worked well.

Special Hospitals.—The Leper House was opened in the Pete in 1845; the building however was small and badly situated; a large one was therefore built in a better spot in 1857. The Lunatic Asylum was opened near the Pete Hospital in 1859, the inmates being removed from a smaller place of custody which had existed 2 years previously in the Cantonment, and a few years ago the old Pete Jail was added to the accommodation.

In the Leper Asylum there were 26 inmates at the close of 1874; in 1875, 19 were admitted. Of these 7 died, 3 absconded, and 3 were discharged at their own request. The population of the asylum constituted about one-fourth of the total number of lepers known to have resided in the Town and Cantonment of Bangalore. The garjun oil treatment was fairly carried out during the year, and the Deputy Surgeon General remarks that “as a therapeutic agent, it has been found to improve the state of the skin, to assist in healing up leprosy sores, to corroborate somewhat the general health, and in some cases to recall sensation to anæsthetic spots, but it has failed to produce any permanent amelioration or to change for the better the true leprosy cachexia. Most of the patients are, however, averse to the external use of the oil.”

In the Lunatic Asylum no restraint is practised, further than confining a patient to his own room when he becomes violent or excited; and as it is believed to be an important point in the treatment of the insane to find for them both mental and bodily occupation, those whose health will admit of it, are regularly employed in some sort of out-door labour, consisting chiefly of gardening, rope making, &c. For the last two years, the males and females have been allowed to mix together freely in the garden without any bad results; on the contrary, it is found that they take scarcely any notice of each other. Nearly half the cases of mental derangement are attributed to the abuse of bangh, opium and intoxicating drugs.

Military Departments.

The Subsidiary Treaty of Seringapatam concluded in 1799, provided

in its 2nd article for the maintenance, within the Territory bestowed upon the Raja of Mysore, of a British Force for the defence and security of His Highness' dominions, on account of which the Mysore State was to pay a subsidy of 7 lakhs of star pagodas (equal to $24\frac{1}{2}$ lakhs of rupees) annually, the disposal of this sum, together with the arrangement and employment of the troops to be maintained by it, being left entirely to the East India Company. The 3rd article provided, that in the event of hostile operations becoming necessary for the protection of either the Company's or the Mysore territories, the Raja should contribute towards the increased charges a reasonable amount, as determined by the Governor General with reference to the net revenues of the State.

British Subsidiary Force.—Under the first of these provisions, Mysore is garrisoned by troops of the Madras Army. The Mysore Military Division now includes Coorg, and the Nilagiri hills. The head quarters were at Seringapatam till 1811, since when they have been established at Bangalore. The only other military station now occupied in Mysore is that of the French Rocks, 4 miles north of Seringapatam: Harihar (Hurryhur) on the Tungabhadra, the last post given up, was abandoned in 1865.

Her Majesty's forces at Bangalore, the strength of which was formerly much larger, consisted in 1875 of the following troops:—head quarters and a battery of Royal Horse Artillery, and two field batteries; a regiment of European Cavalry; a regiment of European Infantry; head quarters and 4 companies of Sappers and Miners; and 2 regiments of Native Infantry. At the French Rocks was stationed a regiment of Native Infantry, with a detachment at Mysore.

Commencing with Colonel Arthur Wellesley, the illustrious Duke of Wellington, the Mysore Division has been commanded by a distinguished line of Generals, including Sir F. Haines, the present Commander-in-Chief in India. The most disastrous event in its annals was the short-lived mutiny of British Officers in 1809. This arose out of certain obnoxious orders which were considered to entrench upon the privileges of the army, in consequence of which the military in many stations of Southern India refused to obey the orders of Government. Prominent among the malcontents was the officer commanding at Seringapatam, who took military possession of the fortress on the 29th July, and stopped parties escorting treasure. The force at Chitaldroog seized the

treasure there and marched for Seringapatam, but was dispersed* by troops from Bangalore. But the mutiny had lasted less than a month, when the officers returned to their allegiance on the 22nd August. In 1857, it was the British regiment withdrawn from Bangalore—the 1st Madras Fusiliers—which, under the since well-known designation of Neill's Blue Caps, † saved Allahabad, avenged Cawnpore, and took a prominent part in the relief of Lucknow, the gallant Neill falling in the assault.

Mysore Local Force.—The Mysore Contingent consists of Cavalry and Infantry, or Savár and Bárr as they are termed. They are commanded by Native Officers, and the whole force is under the control of the Military Assistant to the Chief Commissioner. The disposal made of the Sultan's army on the capture of Seringapatam in 1799, and the military arrangements of the new Government, have already been described (p. 494). During the Mahratta War, a body of the Mysore Siledar Horse operated in 1802 and 1803 with General Wellesley's army. The levies had been increased for this purpose, and on the return of the troops, the sudden disbandment of the extra levies being no less impracticable than impolitic, it was gradually effected. Including the cost of this, the whole expenditure incurred by the Mysore State in connection with the Mahratta War, amounted to a little less than 5 lakhs of star pagodas.

In consideration of this auxiliary, a Supplementary Treaty was entered into in January 1807, whereby all pecuniary claims under the 3rd article of the treaty of 1799 were remitted, with retrospective effect; the Raja being required in future to maintain a body of 4,000 effective Horse (numbering about 500 Bargeer and the rest Siledars) ready to serve with the British Army whenever required, the British Government bearing the charge of batta for service in the field out of the country. It was also agreed that the Force should be increased when required by the British Government, the latter paying a fixed sum, with batta, for each extra horseman.

Siledars.—The Savar or Siledar Horse form the body of irregular cavalry kept up under the above treaty. They have several times served beyond the frontiers of Mysore as auxiliaries in the campaigns of the British Army in southern India, as also in assisting to maintain order.

In 1802, 800 Siledars accompanied Colonel Stevenson in the expedition

* On the 10th of August, near Webb's Monument, since then called the *rana kambha*, or bloody pillar.

† From the colour of the *pagri* worn by the men round their helmets.

to Manantoddy. In 1802—3, 2,000 Siledars accompanied General Wellesley through the Deccan towards Poona. In 1809—10, 2,000 Siledars marched with Colonel Barry Close against Bavoo. In 1815, 500 Siledars accompanied the expedition to Karnul. In 1815 the number of regiments maintained was eleven, and for a period of nearly four years a force of 4,500 Siledars was employed under General Hyslop, &c., against the Peshwa. In 1824—5, 2,000 Siledars accompanied the force against Kittore, and in 1826, 1,500 marched into the Dharwar country.

Subsequent to the assumption of the country, they have been also frequently employed. In the Canara insurrection of 1838, they were required to cross the frontier and afford assistance. In 1845—6, 1,000 Horse were sent to Vizagapatam ; and subsequently on several occasions considerable detachments have been employed in the Bellary and other adjoining Districts. In 1857 the Government of India directed that a body of 2,000 should at once proceed to Hindustan. This order was subsequently countermanded, but a similar number were employed in the districts to the northward of Mysore as far as Sholapur, and took part in the minor affairs which arose during 1857—8 in those parts of India. Here it was that Captain Stewart, now the Military Assistant in command of the force, received a severe wound from a sabre cut. Medals for service in the mutiny were obtained by 378 men of the Siledars.

As there were no circumstances calling for the continued maintenance of the full complement, the number of Siledars has from time to time varied from 2,000 to 4,000, accordingly as required for field service or not.

The number and efficiency of the Force however gradually declined, owing to low pay, bad horses and arms, and the corrupt practices of the Bakshis (as their commanders were called). No proficiency in horsemanship or in the use of arms was insisted upon, while the office of Siledar was almost regarded as hereditary. This state of things drew attention some years ago, and a good deal was done to improve it ; such as the adoption of a uniform, the arming of the men with a serviceable lance, providing lines for each Regiment, which did not previously exist, the establishment of a Chanda Remount Fund, which freed the service from its former precarious character, the raising of the pay of each man from 20 to 26 Rs. per month (one Regiment of the service then maintained being reduced to provide funds for this most necessary measure), and lastly the introduction of a new and better system of accounts and payment. Nevertheless much remained to be accomplished to render the Siledars even passably efficient as an arm of the local militia.

In 1873, detailed arrangements were ordered for rendering the Siledars a compact body of efficient horsemen. In the first place it was considered that the numerical strength of the Force was much more than was called for by the requirements of the Province, and that 1,000 well disciplined and efficient men would serve all purposes during the present times of peace. Orders were accordingly issued for the gradual reduction of the Force, to consist in future of 3 Regiments, the strength

1 Regimentdar.	330 Sivas.
6 Kisildars.	1 Farrier Major.
6 Jamadars.	6 Farriers.
1 Sircadardar.	1 Foot Mahaldar.
36 Datsildars.	1 Sargeshkar.
1 Nishanildar.	6 Peshkars.
1 Trumpet Major.	4 Jhantavals.
6 Trumpeters.	
1 Kettle Drummer.	

of each Regiment being as noted in the margin. The reduction was effected by offering inducements to retire, in the shape of pensions. At the same time a carefully graduated scale of invalid pen-

sion was made applicable to the Siledars for the future, thereby giving greater stability to the service. The Force is being properly drilled, under the supervision of a specially appointed European Adjutant, aided by drill instructors from the Madras Light Cavalry. In 1875—6 the strength of the force was 1,241, including 35 commissioned and 101 non-commissioned officers. About $\frac{3}{4}$ ths of the Siledars are Muhammadans, and the remainder chiefly Mahrattas, with $\frac{1}{10}$ Brahmins and Rajputs.

The Chanda Fund system was first introduced in 1869. Its principal features were, that each Siledar was to pay 1½ R. monthly towards the Fund, in consideration of receiving from it Rs. 200 towards the purchase of a remount, on the death or rejection of his horse. These were since altered in favour of the system in force in the Bengal Cavalry. Each Siledar now pays 2 Rs. a month towards the Fund, from which fresh horses are maintained, and on the death or rejection of his horse, a Siledar contributes but a month's pay, without reference to the value of the horse which he receives. Precautions are of course adopted to prevent an undue advantage being taken of this benefit, and the working of the system has been satisfactory, and is popular among the Siledars. The horses for the force are procured from Candahar and Persian dealers, or are the produce of the mares in the force by Government stallions, of which there are now 19.

Barr.—The Barr or Infantry is also a relic of Tippu's army. The

1 Commandant.	1 Havildar Major.
1 Kisildar.	70 Havildars.
1 Adjutant.	20 Drummers and
10 Subadars.	Fifers.
10 Jamadars.	500 Privates.

strength of the force was 2,270 at the beginning of 1800 ; it was raised to 8,000 during the war of 1803—4, when the force was disciplined after the Eng-

lish pattern, and was 4,000 in 1817. On the transfer of the country to

British rule, it was reduced to 4 regiments of 500 each. The strength of each regiment, omitting servants, is as given in the margin. In 1875—6, the total strength was 2,435, which includes 91 commissioned and 278 non-commissioned officers. The duties of the Barr are confined to guarding the District and Taluk treasuries, Jails, &c. All 4 regiments, till 1870, were armed with old flint muskets. These have since been gradually exchanged for percussion muskets.

Bangalore Rifle Volunteers. A Volunteer Force was raised at Bangalore in 1868, and is popular with the young men of the large Anglo-Indian community of this station. Three companies were here formed, in 1873 an additional company was raised in Mysore, and in 1875 a cadet company in Bangalore. The strength of the force now is 250 in Bangalore and 50 in Mysore, with 100 cadets at the former place.

Conclusion.

The chapter on Administration may appropriately conclude with the following remarks from the Annual Report of 1872—73.

The Province of Mysore is governed under circumstances which call for an administration at once vigorous and delicate. The abuses, all traces of which have perhaps not yet disappeared, which were prevalent under the late Raja's administration, call for a policy of gradual but decisive reform; while the status of the Province as a Native Principality which in a few years will be handed over to a native dynasty, requires that the administrative machinery shall be gradually adapted to the future. As to the proper policy of adaptation, opinions will always greatly differ. There are some who oppose every reform tending towards the introduction of the regulation system, on the ground that "the administration will become too elaborate", and that the system of government usually termed patriarchal is best adapted to a Native State. These, however, are not the views which during late years, under the directions of the Government of India, have actuated the Administration; which determined the partial introduction of the regulation system under Mr. Bowring, and which influenced Sir Richard Meade in working out and systematizing the policy of his predecessor.

While over-elaboration in the system of government cannot but be an evil as well in a Native State as in British Territory, the patriarchal system is perhaps even less adapted to a Native State than to a Province under British rule, for the reason that those personal qualities in the

rulers which alone can secure to such a system even a moderate and transient success, are rarely possessed by the natives of India. It is not frequently that a Native Officer can be found, who, to the patience and learning required in a judicial officer, adds the activity and energy without which an executive officer is useless. On the other hand, in these days of high education, no difficulty will ever be experienced in procuring the services of Native Officers who, in point of intellectual ability, are amply qualified to work any system however elaborate and however nearly approaching to a European model. Nor, if we examine the condition of those States which are now governed by Native Rulers, do we find any tendency to allow subordinate officers to improvise for themselves, unchecked by law, precedent, or central authority. The past history of Mysore, and (it is believed) the events now passing in such Native States as Travancore and Hyderabad, shew that the tendency is rather the other way, that in a well governed Native State, care is taken not to trust too much to the individual qualities of subordinate administrators, that the patriarchal system in a Native State is a synonym for anarchy and corruption, and that the most successful Native States are those which strive to imitate a European model.

While, therefore, in all the Departments of Government, a system of thorough organization is attempted, care is taken to avoid undue elaboration. At the same time it is felt that the system of government need not essentially differ in its main principles from that which is in force in British Territory. It is believed that Mysore may, without imperiling its future as a purely Native State, share in the progress towards enlightenment which the people are making throughout British India, and that the policy of adaptation should be directed rather towards the material than the system of administration; in pursuance of which policy, a Native Civil Service is gradually being educated. It is considered that the closing years of British rule in Mysore should witness—not disorganization in the vain pursuit of a phantom system of Native Administration—but a thorough consolidation of what has already been done, to the end that the Province may be handed over to His Highness the Maharaja in perfect order. If this policy be carried out, the transition of Mysore from British to Native rule will not be nearly so abrupt as is generally believed, provided always that the officers in whom the subordinate administration is vested at the time of transition are natives of ability and integrity.

SPECIMENS OF MYSORE COINS.

Gold



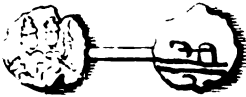
Kanthiraya kasa
(Kanthiray / kasa)

Silver



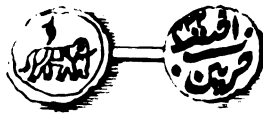
Mayili fanam

Gold



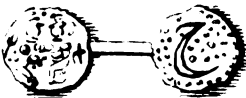
Dakeri varaha

Copper



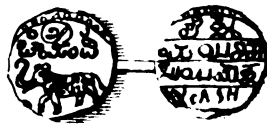
Sultan dard

Gold



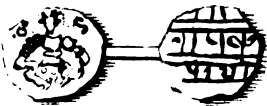
Bahaduri pagoda

Copper



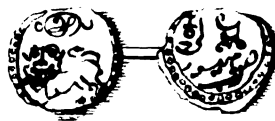
Mayili cash

Gold



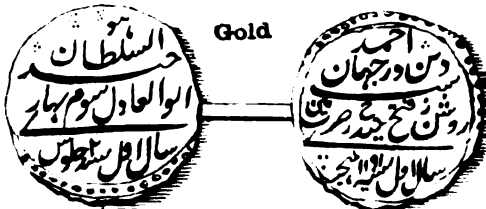
Durgi pagoda

Copper



Mayili cash

Gold



Ahmadali or Sultan Ashraf
(gold mohur)

APPENDIX.

COINS, WEIGHTS AND MEASURES.

Owing to the number of Principalities into which the Mysore country was broken up on the subversion of the Vijayanagar Empire, each of which arrogated to itself the sovereign right of coining its own money; and to the subsequent conquests in succession by various rival powers, each of whom introduced a separate coinage, which passed into circulation along with the divers kinds previously current; nothing could be more confused or perplexing than the whole monetary and metric system down to the time of the British assumption.* But a measure of uniformity is beginning to prevail, though calculations continue to be made on the former system of each locality. The introduction of English figures into all the Government accounts since 1863, and the increase of European officers and settlers, have led to increasing regularity; while the system of arithmetic taught throughout the Government schools, though recognizing to some extent the methods of the country, is calculated to bring in a conformity with the practice observed throughout British India.

Coins.

The coins of the country were either of gold, silver or copper. Gold coins, at first so numerous, are now rarely seen, and the silver and copper coins in general use at the present time are those of the British Indian currency. According to Ferishta, there was no silver coinage in the Carnatic countries at the beginning of the 14th century, and even three centuries later we find only gold and copper coins in existence.

Gold Coins.—These are known to Europeans as *pagodas*, *fanams* and *mohurs*. The pagoda is an original Hindu coin, called *varaha*, from the symbol on it of the varaha or boar, one of the incarnations of Vishnu, which formed the crest of the Chalukyas and of the Vijayanagar kings. In some parts it seems

* The value of the different coins, says Buchanan, was frequently changed by Tippu Sultan in a very arbitrary and oppressive manner. When he was about to pay his troops, the nominal value of each coin was raised very high, and kept at that standard for about ten days; during which time the soldiery were allowed to pay off their debts at the high valuation. After this the standard was reduced to the proper value.

After the conquest of the country, the *nirak*, or rate of exchange by which all the different coins could be offered as a legal tender of payment, was periodically fixed, generally once or twice a month, at the various centres of trade, by the Amildar, who first consulted the principal merchants. In Bangalore, the *nirak* was fixed by the European Officer commanding in the Fort.

also to have been called *chakra*. In Hindustani the coin is known as *hun*. coined. A half pagoda was called *honnu*. The fanam is properly *hana* or *pana* neuter form *panam*. As with the pagodas so there is a variety of fanams issued (*mohur*) of a seal or stamp. Mohurs came into circulation with the Bijapur and

The following is a table of the

Name.	By whom coined.	Where coined.	Earliest date of coin A. D.	Intrinsic value of 100 in Govt. mohurs.
<i>Pagodas.</i>				
Nonamburá li varaha	(unknown)	?Huchangi durga	...	...
Ikkéri varaha	Sivappa Náyak	... Bednur ...	... 1648	27.099
Siva Ráya "	? do ...	... ? do ...	...	...
Baháduri hun	Haider Ali ..	... do (Nagar)	1763	27.032
Do "	do ..	... Bangalore ...	...	...
Sultáni "	Tippu Sultan ..	... Seringapatun &c.	1783	26.873
Kuki Sultáni "	"	"		26.632
Fárokhi	Do	Seringapatam	...	...
Krishna Raja varaha	Krishna Raja Wodeyar	Mysore ...	... 1811	26.851
Durgi "	Barma Nayak ...	Chitaldroog .	... 1691	25.714
Kallukunte "	...	Kallukunte near Chitaldroog	1727	

* Pagoda is a word of Portuguese origin, commonly applied by Europeans to a Hindu temple,

† This Appendix had been already compiled before chance brought into my hands a valuable little Commissary General, compiled for the Madras Exhibition of 1857. Some additional information time met with *Assay Tables of Indian Coins*, by Dr. Shekleton, Assy Master of H. M.'s Mint,

There were various pagodas, * named from the States in which they were severally (a word used also for money in general), and is doubtless a corruption of the from different mints. The mohur is a Muhammadan coin, bearing the impression Mogul conquests, and some were coined in Mysore by Tippu.†

principal Mysore gold coins:—

Symbols or Legends.		Remarks.
Obverse.	Reverse.	
‡ Figure of Kāli.	Three lines in Hale Kanna- da characters, the middle one being [No] <i>ṇambavāḍi</i>	This is a coin which I have nowhere seen mentioned; it is in the Mysore Mu- seum. Nonambavāḍi was the name of the Chitaldroog District under the Chal- ukyās and Hoysala Ballālas, but not as far as I know under the Vijayanagar kings. The coin would thus be as old as the 13th century, and perhaps older.
Figures of Uma and Mahe- vara.	<i>Sri</i> in Nāgari, with two parallel lines below, under which are (?) the sun and moon.	Afterwards called the <i>Hale Ikkeri</i> <i>varaha</i> or old Ikkeri pagoda, to distin- guish it from the coin issued by Purmaiya in 1800, called the <i>Hosa Ikkeri varaha</i> or new Ikkeri pagoda.
do do with some numbers below, shewing the value (according to the fractional system ex- plained at p. 9)	Inscription in Nāgari ? <i>Koja Varaha</i> .	
Figures of Uma and Mahe- vara	Haidar's monogram, sur- rounded with dots.	This was the Ikkeri pagoda with the obverse changed. It was the first coin struck by Haidar in his own name, and is called the Old Bahaduri pagoda. A subsequent recoinage of the same, of rougher execution, is called the New Bahaduri pagoda.
do do	do do	Called <i>darbā tale Bengalūri</i> , or big- headed Bangalore pagoda.
<i>Hun al Sultan ul adil san</i>	Haidar's monogram and dots; within the former the number of Tippu's regnal year, and often below, the name of the city in which the coin was struck	The pagoda coined in the 3rd year of his reign bears the word <i>Nagar</i> ; that in the 4th, <i>Patan</i> (Seringapatam); that in the 6th, <i>Dharwar</i> , &c., &c.
<i>Alla Muhammad wuhul ul wuhid al Sultan ul adil san 1220.</i>	<i>Fārokhī, Patan, san 10.</i>	Supposed to have been named after a new sect.
Figures of Uma and Mahe- vara.	<i>Sri Krishna Rāja</i> , in Nāgari	This was the Ikkeri pagoda with a new face.
Figure with a bull's head, said to be Durgi.	?— <i>Nāyaka Rāja</i> „	
...	...	Said to have been forged by a gold- smith in the reign of Hūrē Madakeri Nayak.

and given to this coin perhaps from a representation on it, in some parts, of a temple.

pamphlet on the *Coins of Mysore and Southern India*, by Captain H. P. Hawkes, Assistant
thence derived has been incorporated, and from it the illustrations are borrowed. I also at the same
Calcutta, which furnished several particulars. The latter however are still not complete.

Name.	By whom coined.	Where coined.	Earliest date of coin A. D.	Intrinsic value of 100 in Govt. mohurs.
Mole Durgi varaha or Jambusari	Chikka Madakeri Nayak	Chitaldroog ...	1758	23-315
Sirpi "	...	Sira ...	...	...
Mamur Khan "	...	" ...	...	...
Hoskote "	? Biramji ...	Hoskote ...	...	...
<i>Half pagodas.</i>				
Ikkéri honnu	Bádi Basappa Nayak	... Bednur ...	1739	...
Durgi "	See pagodas of same name.	Chitaldroog.	1691	...
Kallukunte "	"	"	1727	...
Mole Durgi "	"	"	1758	...
Gaddige Siva Raya "	...	Seringapatam	...	...
Guttala honnu	...	...	...	...
Krishna Raya pradápa.	...	...	...	...
<i>Fanams.</i>				
Kanṭhiráya hana	Kanṭhirava Narasa Raja	Seringapatam	c. 1650	2-088
Chikka Deva Raja hana	Chikka Deva Raja.	Seringapatam	1672	
Káli "	"	...	...	
Ikkéri "	See pagodas of same name.	...	...	
Siva Raya "	"	...	...	
Bahaduri "	"	...	...	
Kalikot "	Haider Ali	Calicut.	1773	2-039
Adda Kalikat "	"	"	1778	
Sultáni Kalikat "	Tippu Sultan.	"	...	
Sultáni hana (aval)	"	Seringapatam.	...	
" " (duyam)	"	"	...	
Nagar Sale hana	"	Nagar.	1786	2-081
Dhoti "	"	...	...	2-094
Sayad Sale "	"	Chandgal.	...	2-090
Ballapur "	Abbas Khuli Khan.	Dod Ballapur.	...	
Badshahi	Haider Ali(?)	"	...	2-077
Chik Ballapur,	" (?)	Chik Ballapur.	...	
Devanhali "	...	...	...	
Nandi "	...	...	...	2-253
Sirpi "	...	Sira.	...	2-235
Mamur Khan,	...	"	...	
Aval Muhammad Shahi	...	Kolar.	...	
Hoskote hana	...	Hoskot.	...	
Kunigul "	Konje Ganda	Kunigul.	...	
<i>Mohurs.</i>				
Ahmadi or	Tippu Sultan.	Seringapatam.	1783	112-106
Sultani ashrafi	...	...	...	
Imámi (double mohur)	"	...	"	
Sidaki (half mohur)	"	...	...	

Symbols or Legends.		Remarks.
Obverse.	Reverse.	
Punch marks.	A punch mark, between two pairs of parallel lines.	
...	...	
...	...	
...	...	
Figure of Benne Krishna (Krishna with butter in his hand.)	Inscription in Nāgari	
...	...	
...	...	
...	...	
...	...	
...	...	
?	Figure of Kanthirava or Narasimha (an avatar of Vishnu).	Commonly written Canteroy fanam. This was afterwards called the <i>agala Kanthiraya hana</i> or broad Canteroy fanam, to distinguish it from a re-issue made by Purnaya, which was called the <i>gidda Kanthiraya hana</i> or small thick Canteroy fanam.
Figure of Kāli	<i>Chikka Deva Raja</i> , in Kan.	
" "	<i>Sri Kōli Deva</i> .	
...	...	
...	...	
...	...	
...	Hai lar's monogram, surrounded with a line and row of dots.	
<i>Kalikāt, san 1166</i>	" "	This coin was re-issued more than once by Tippu.
<i>Zarb e Patan, san, surrounded with a line and row of dots.</i>	" "	The words <i>aval</i> (first) and <i>duyana</i> (second) relate to the difference in size: the latter is also called <i>gidda hana</i> .
<i>Zarb e Nagar, san 1200</i>	" "	
<i>Farhi 1218</i>	" "	
<i>Khalekhabad zarb 1217</i>	" "	
<i>Bālāpur</i> (Hind)	<i>Ba lāpur</i> (Hind)	Khalekhabad was the name given by Tippu to Chandgal near Seringapatam.
<i>Nishān Haidar</i> (Hind)	<i>Ba lāpū r</i>	It is singular how two or three letters only of the name Balapur, apparently taken at random, are stamped on these coins, (figured by Captain Hawkes) as shewn out of the brackets. It would seem as if a strip of metal had been stamped with the name, and then cut up into coins, whence a few letters only appeared on each.
<i>Bālāpur</i> (Hind)	? Mahratti characters.	
<i>Muhammad Shah</i>	<i>Zarb Kolar</i>	
? Coat of chain mail	Two faint circles.	
<i>Din Ahmad dar jahān roshan se fatteh Haidar ast. Zarb Patan, sal azul 1197 Hijri.</i>	<i>Wohul al wohid al Sultan ul ahl. Siyum Bahari sal azul san 2 Julūs.</i>	
<i>Muhammad din Ahmad dar jahān tarik Haidari Sidaki, zarb e sal sara</i>	<i>Wohul atil jarak sal siyum mahavari san. Julūs.</i>	

Silver Coins.—The silver coins were *rupāyi* or rupees (so called from a

Name.	By whom coined.	Where coined.	Earliest date of coin A. D.	Intrinsic value of 100 in Govt. Rs.
Rupees.				
Nokara (double rupee)	Tippu Sultan	Seringapatam.	1784	
Sultāni rupāyi.	"	"	"	101-599
" ātha rupāyi (½ r)	"	"	"	
Pākri (¼ ")	"	"	1789	
Jasri (¼ ")	"	"	"	
Kajmi (¼ ")	"	"	1794	
Kizri (¼ ")	"	"	"	
Rāja rupāyi	Purnaiya.	"	1800	102-300
" ardha rupāyi (½ ")	"	"	"	
" pāvali (¼ ")	Krist na Rāja Wodeyar	Mysore.	1828	
Silver Fanams.				
Adda (½ fanam)	Krishna Rāja Wodeyar	Mysore.		7-433
Hāga (¼ ")	"	"		

Copper Coins.—The copper coins were *dudḍu* or dubs (Hindustani *paisa*), elephant, *āne*, whence the name āne or anna, though the latter term is perhaps circulation:—

A'ne kāsū	...	...	before 1760	...
Durgi "	Palegar of Chital droog	Chitaldroog.	"	...
De-paisa (double dud)	Tippu Sultan	Seringapatam.	various.	...
Paisa (dud)	"	"	"	
Duggāni	"	"	"	
Kās	"	"	"	
Kāsū or A'ne kāsū	Krishna Rāja Wodeyar	Mysore.	after 1811	
Mayili kāsū	"	"	later than above.	
"	"	"	"	
"	"	"	"	
"	"	"	"	
"	"	"	"	
"	"	Bangalore.	1843	

word meaning silver), and *fanams*. The following is a table of silver coins :—

Symbols or Legends.		Remarks.
Obverse.	Reverse.	
<i>Din Ahmad dar jahān roshan se fatteh Haidar ast. Zarb Patan sāl azāl san 1198 Hijri</i>	<i>Wohu-ul-wohid al Sultan ul adil, siyūm Bahari sāl azāl san 2 Julūs.</i>	Slight differences occur in the inscriptions, but they are all to the same effect.
"	<i>Horas Sultan wohid ul adil &c. as above</i>	
<i>Alla Muhammad hon al Sultan ul Adil san 1218.</i>	<i>Bākri, san 7 Patan.</i>	
<i>Alla Muhammad san 1226 Zarb Patan.</i>	<i>Kajmi, san 12 Julūs.</i>	
Figure of Chāmundi, surrounded with dots.	<i>Kishen Raj Wodeyar, san 1244 Julūs, zarb Mahisūr (in Hind.), surrounded with dots.</i>	Afterwards recoined by Krishna Raja Wodeyar. Some are dated according to the Kali yuga.
Figure of Chāmundi.	<i>Mayili lanna (Kan.)</i>	Called the <i>mayili fanam</i> . The meaning of <i>mayili</i> is not very clear. It may be connected with an old Kannada word <i>muyyi</i> , signifying <i>token, exchange</i> ; unless it refers in any way to Mayiliapur (St. Thome) at Madras.
"	" "	

and *kāsu* or cash. They as a general rule bore on one side the figure of an a compromise between *hanna* and *āne*. The following were the varieties in

Figure of an elephant.	Crossed lines.	Of two later coinages, one has Hindustani <i>A</i> and another <i>T</i> over the elephant in place of <i>B</i> .
Do. with sun and moon above.	"	
A bull-headed figure, said to be Durgi	"	
Figure of an elephant, with Hind <i>B</i> above.	<i>Zarb Patan darul Saltanat san 1225 Maulūti, Mashta (Jupiter) Zarb Patan san Mauludi 1225 Zahera (Venus) 1225 Bahiram (Mars) 1225 Akhtar (Star)</i>	
Figure of an elephant, with sun and moon above.	<i>Sri Krishna Raja in Nagari.</i>	Or V or XX as the case might be. (For note on <i>Mayili</i> , which is spelt in English on some of the coins <i>dieilli</i> and on others <i>Mailay</i> , see list of silver coins.)
Do. do. with <i>Sri</i>	<i>X Cash (in English)</i>	
in Kan. above	<i>Mayili kāsū 10 (in Kan.) Chā (in Kan. for Chāmundi) Mayili kāsū 5 (in Kan.) V Cash (in English)</i>	
" "	<i>Krishna, (in Kan.) Mayili kāsū ipattu (in Kan.) XX Cash (in English)</i>	
Figure of an elephant with <i>Sri Chāmundi</i> above (in Kan.) and symbols of the sun and moon.	<i>Krishna, (in Kan.) Mayili kāsū ipattu (in Kan.) XX Cash (in English)</i>	The last coin struck in Mysore.
Figure of the lion (of Chāmundi) with <i>Sri</i> (in Kan.) and sun and moon above.	<i>Krishna (in Kan.) surrounded by XXV Cash (in English) zarb Mahisur (in Hind.) Mayili 25 kāsū (in Kan.)</i>	
Do do	<i>Krishna (in Kan.) zarb Mahisur (in Hind.)</i>	
Do do with 1843 (in English) below.	<i>Krishna (in Kan.) Mahisur zarb (in Hind.)</i>	

Of the Mysore Rajas the first to establish a mint was Kanthirava Narasa Raja, who ruled 1638—1658: and even after the coins struck by him had become obsolete, the accounts continued to be kept in Kanthiraya varaha and hana—the Canteroy pagodas and fanams of the English treaties with Mysore and of the official accounts down to the time of the British assumption. Kanthi Raya coined fanams only (*Kanthirāya hana*), but ten of these were taken to be equal to a varaha or pagoda, which had however no actual existence, but was a nominal coin used in accounts only. The Mysore Rajas did not coin varaha or pagodas. These were coined by the Ikkeri rulers of Bednur; on the conquest of their country by Haider, the name was changed to Bahaduri varaha or hun, and in the reign of Tipu to Sultani varaha. Under Purnaiya's government, it was found convenient to recoin varaha both at Mysore and Nagar, but they were called by the old name of Ikkeri varaha.

The following coins now in circulation are those of British India, together with a few native copper coins, which however are being withdrawn and sold, broken up, as old copper.

Copper.	Kāsu	Pie or cash.	Silver.	Dold āne	2 annas.
	Duggāni	$\frac{1}{2}$ duddu, 2 pie.		Pāvāli	$\frac{1}{2}$ rupee.
	Mor kāsu	$\frac{1}{4}$ anna.		Arthā rupai	$\frac{1}{2}$ rupee.
	Doddu	$\frac{1}{4}$ anna.		Rupai	Rupee.
	Arddāne	$\frac{1}{2}$ anna.			
	Ane.	anna.			

Accounts.—In order to explain the way in which accounts were written, it is necessary to describe the system of fractions and signs. The following are the names of the fractional parts :—

III	Mukkālu	$\frac{3}{4}$	III	Mārvisa	$\frac{3}{16}$	III	Mukkāni	$\frac{3}{64}$
II	Are	$\frac{1}{2}$	II	Bēle	$\frac{2}{16}$	II	Arvisa	$\frac{2}{64}$
I	Kālu	$\frac{1}{4}$	I	Visa	$\frac{1}{16}$	I	Kāni	$\frac{1}{64}$

The fractional parts of a pagoda, rupee, or fanam were expressed by the marks above exhibited, but the terms varied with the coin. Pagodas were marked by prefixing *ro gu*, rupees by prefixing *ro ru*, and fanams were distinguished by prefixing the mark σ , called *mukāra*.

Names of fractional parts of coins and mode of writing them.

Value.		Pagoda.		Rupee.		Fanam.
1	ro o	Varaha	ro o	rūpāyi	σ III	opphana
$\frac{3}{4}$	ro II	muddharana	ro II	muppāvali	σ o II	nuppāga
$\frac{1}{2}$	ro II	h neu, padāya	ro II	arthā	σ o I	adda
$\frac{1}{4}$	ro I	charaṇa	ro I	pāvāli	σ o I	haga
$\frac{3}{16}$	ro III	mudugula	ro III	mārāne	σ ro III	mūru visa
$\frac{2}{16}$	ro II	chavala	ro II	erudāne	σ ro II	bēle
$\frac{1}{16}$	ro I	dugula	ro I	āne	σ ro I	visa
$\frac{3}{64}$	ro III	mūru bottu	...	...	σ o o o III	mukkāni
$\frac{2}{64}$	ro II	eradu bottu	...	...	σ o o o II	are visa
$\frac{1}{64}$	ro I	bottu	...	...	σ o o o I	kāni

In the west, the mode of writing the accounts was somewhat different.

One of 8 seers is called the Krishna Raja kolaga, being $\frac{1}{10}$ of the Krishna Raja khandi established by Purnaiya. The kolaga of 10 seers is called khararu kolaga.

Measures.

Before the introduction of the English land measures, the land measures in Mysore corresponded with the measures of capacity, and depended on the area of land which can be sown with a given quantity of seed. This varied greatly on dry and on wet land, and for every variety of grain and of soil. It is almost needless to observe that this mode of measurement afforded incompetent or dishonest revenue officials plausible excuses for laxity of practice and fraud. But in order to introduce uniformity, the following measures have been determined. On dry land it was estimated that one khandi or khandaga of seed would suffice to sow 64,000 square yards, and accordingly this area represents a khandi of dry land, whereas on wet or garden land, a khandi would only sow 10,000 square yards, which area denotes a khandi of wet land.

The following therefore are the established standards.

Grain measure.

4 Chattaks	=	1 Pávu.
2 Pavus	=	1 Payili or Padi.
2 Padi or Payili	=	1 Seer.
2 Seers	=	1 Balla.
4 Ballas	=	1 Koliga or Kudu.
20 Kolagas or Kudas	=	1 Khandaga or Khandi.

Land measure.

Quantity of seed sown.		Square yards.	Equivalent area of land.			
			Acres.*	Guntas.	Sq. yards.	
<i>Dry Land.</i>						
1	Payili or padi	...	200	...	1	79
2	Ditto = 1 Seer	...	400	...	3	37
2	Seers = 1 Balla	...	800	...	6	74
4	Ballas = 1 Kudu	...	3,200	...	26	54
20	Kudas = Khandaga or Khandi	...	64,000	13	8	112
<i>Wet and Garden Land.</i>						
1	Payili or Padi	...	31½	...	...	31½
2	Ditto = 1 Seer	...	62½	...	...	62½
2	Seers = 1 Balla	...	125	...	1	4
4	Ballas = 1 Kudu	...	500	...	4	16
20	Kudas = 1 Khandaga or Khandi	...	10,000	2	2	78

* Acres consist of 40 Guntas, each Gunta being 121 square yards.

Measures of Time.

Eras.—By the Hindus in Mysore the Sáliváhana Saka, or era of Sáliváhana, dating (with sometimes a variation of two or three years) from 78 A. D., has always been and still is universally employed. Occasionally the era of Kali Yuga, 3101 B. C., is used.

An attempt was made by Vikramáditya, the most powerful of the Chálukya kings, to introduce a new era, dating from his accession to the throne, and called the Chálukya Vikrama saka. The near coincidence of the end of the first millennium of Salivahana with the commencement of his reign, and the correspondence of his name with that of the era reckoned from 57 B. C., in universal use in the north of India, doubtless suggested the innovation, in conjunction with the usual motives of ambition. The Chalukya Vikrama era dates from 1076 A. D., and continued in use in inscriptions throughout their dominions as long as the power of the Chalukyas was in the ascendant, though several of Vikramaditya's successors copied his example and sometimes dated from their own eras.*

By the Muhammadaus the era of the Hijra, or Flight, of Muhammad from Mecca to Medina, is universally employed. It dates from 622 A. D., reckoning by lunar years.†

Tippu Sultan, with that love of innovation which characterized his rule, and from his ambition to establish a new order of things originating with himself, made a reformation of the calendar; in this also, as in so many other particulars, the transactions of the French Revolution finding an echo or parody in Mysore. Tippu's new system, which ended with his life, was introduced with the 1200th year of the Hijra, or 1784 A. D., but was revised four years afterwards. The new era, in opposition to the practice of the whole Muhammadan world, dated from the Maulúd, or Birth, *i. e.* as supposed, of Muhammad. But the difference between Tippu's new Maulúdi era and that of the Hijra was only about 12 years, whereas Muhammad was 51 years of age at the time of the Hijra. The Maulud may therefore perhaps be supposed to have some possible reference to the origin of Islam, counting it from the period when Muhammad first formed the conception of his prophetic mission, which is said to have been at 40 years of age. Thus much is necessary to state on the subject in order to explain the apparent discrepancy of the dates on his coins, &c. It would

* From confounding the Chalukya Vikrama era with the northern era of Vikramaditya, the Administration Report for 1869—70 contains the announcement that inscriptions had been deciphered and translated bearing date *as far back as the year one!*

† The following formula given by Sir H. Nicolas will be found useful in converting Hijra into Anno Domini dates. Multiply the years elapsed by 970203; cut off six decimals; add 622·54, and the sum will be the year of the Christian era.—*Chron. of Hist.* 17.

serve no purpose to give the list of new names he applied to the months and years at first, nor of the second scheme which superseded the former. All the particulars are contained in Colonel Kirkpatrick's *Select Letters of Tippu Sultan* and other works.* Suffice it to say, that another feature of the new scheme was that the numbers were written from right to left, instead of in the usual manner according to the decimal system.

Years.—The *Brihaspati Chakra* or Cycle of Jupiter, of 60 years, is the common and general mode of reckoning. Each year has a special name, which alone it is usual to mention, without its number according to any era.

The year commences with new moon in Chaitra, which falls in March. It is divided into 12 lunar months, each of which is divided into two *paksha*—the *sukla paksha*, or *sudda*, the bright fortnight from new moon to full moon; and the *krishna paksha* or *bahula*, the dark fortnight from full moon to new moon. Each *paksha* contains 15 *tilhi* or lunar days, which are reckoned from *amavāse* (new moon), or *pūrṇami* (full moon), as the case may be. The days of the week are named from the planets, on the usual system. The day of 24 English hours is divided into 60 *ghalige* or Indian hours, each equal to 24 minutes: $7\frac{1}{2}$ *ghalige* or 3 English hours make one *jāma* or watch.

* See *Asiatic Annual Register* for 1799; Brown's *Carnatic Chronology*; also an article by Purnaiya, a descendant of the great Divan, in *Ind. Ant.* III, 112.

Corrigenda et Addenda.

Vol. I.

- Page 8, line 3. For *west*, read *east*.
 " 12 " 24 " *tail* " *tali*.
 " 19 " 34 " *tluc* " *talc*.
 " 43 Add to observations the following :—
- | | 1874 | 1875 | 1876 |
|----------------------------------|--------|--------|--------|
| Mean barometric pressure ... | 26·922 | 26·922 | 26·919 |
| " temperature of air ... | 71·9 | 72·7 | 73·6 |
| " " of wet bulb ... | 64·5 | 64·6 | 60·3 |
| " observed extremes { maximum | 83·3 | 84·7 | 85·9 |
| of temperature { minimum | 63·4 | 63·8 | 64·1 |
| " humidity (saturation 100) ... | 70· | 66· | 64· |
| " maximum solar heat in vacuo | 132·5 | 143·1 | 143 |
| " minimum on grass ... | 61·6 | 56·6 | 61·6 |
| " Depth of rain in inches ... | | 22·20 | 17·35 |
| " No. of days on which rain fell | | 76 | 73 |
- " 163, line 1. After *tusseh silkworm*, insert (*antheræa paphia*).
 " 214, " 8. After *clue* insert *from the statement on p. 373 it would appear that it was in the neighbourhood of Huncha*.
 " 224, " 17. Read Krishnâ Raya, 1508—1530; Achyuta Raya, 1530—1542.
 " 303, " 1. After *two Commissioners* insert *Col. Briggs and Mr. Lushington*.
 " " 12. After *one Commissioner* insert (*Col. W. Morrison*).
 " 304 " 3. Add note;—The following is the succession of Residents of Mysore :—
 Colonel (Sir Barry) Close 1799—1802
 Mr. Josiah Webbe 1802—1803
 Colonel (Sir John) Malcolm 1803—1809
 Colonel Mark Wilks, acting 1804—1807
 Hon. Arthur H. Cole 1809—1825
 Mr. J. A. Casamajor 1825—1834
 Colonel (Sir Mark) Cubbon, acting 1834
 Colonel J. S. Fraser 1834—1836
 Major R. D. Stokes 1836—1843
 " 306 Add note;—The Hon. R. A. Dalryell acted as Chief Commissioner in 1875—6, during Sir Richard Meade's absence. In June 1876 Mr. Saunders, C. B., was appointed.
 " 309, note †. Correct the authority to *Beames, Comp. Gram. Int. xi*.
 " 327, foot note. For *Scotus* read *Scotorum*.
 " 395, line 21 " 12th " 13th.
 " " 22 " 17th " 18th.
 " 393, " 1. After *use* add *excepting in technical terms*.
 " 440, last line. For 4, read 1 to 20.

Vol. II.

- Page 18, line 27. For 1364 read 1310
 " 21, lines 11 & 20. For *Jagat Deva Râyal*, read *Jagadêva Râyal*; also wherever this name occurs.
 " 207, For note † read,—Davasi Betta is the highest point of the Brahmagiris, which separate Coorg from Wynad, and is the source of the Lakshmantirtha river.
 " 277, note † last line. For *dhoregalu* read *dhoregalu*.
 " 321, line 7. For *one of the Chaukiya kings*, read *the chief of Banavar*.
 " 341, After third paragraph, insert,

Channels.—There are 165 anicuts on the rivers of the District and their feeders, from which are drawn channels for irrigation, having an aggregate length of 168 miles 1,007 yards, and yielding an annual revenue of Rs. 26,693. The following are the particulars :—

Feeders of what stream.				No. of Anicuts.	Length of Channels.	Revenue.
						Rs.
Sharavati	...	...	...	70	m. 26 y. 102	6,785
Varada	...	...	...	51	40 328	
Choradi	...	...	...	12	33 780	
Tunga	...	...	...	29	68 1,557	
Tungabhadra	...	...	...	3	...	219

Page 355, line 17. For *the viceroy.....Mysore*, read *the last representative of the Vijayanagar kings*. Also p. 416 and 443 (See Vol. I, p. 234.)

„ 355, add note.—The following appears to be the succession of the Náyaks of Ikkeri, Keladi or Bednur:—

Sada Siva Nayak	... 1559—1575	Bha'rappa	... 1670—1680
Bhadrayya or Bhadrappa	... 1575—1584	Hucha Somasekhara (mad)...	1680—1685
Dolda Sankana	... 1584—1591	Chinnammáji (queen)	... 1685—1697
Chikka Sankana	... 1591—1592	Basavappa	... 1697—1713
Siddappa	... 1592—1593	Somasekhara	... 1713—1739
Venkatappa	... 1593—1625	Búdi Basavappa	... 1739—1754
Bhadrappa	... 1625—1648	Chikka Basavappa	... 1754—1757
Sivappa Nayak	... 1648—1670	Somasekhara (Virama áji queen regent).	... 1757—1763

„ 366, line 4 of Gazetteer. For *afterwards* read *from* 1857.

„ 448, Add note.—The Vastara taluk was included with that of Chikmagalur in 1832, separated in 1849, and again merged in it in 1875.

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